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Front cover: Water Pipit *Anthus spinoletta* feeding on mine-water stream, Dearne Valley March 2018 (see p117). Note the supercilium, strongly marked face and white outer tail feathers as well as the strong bill and patterned coverts. The prey is likely to be a crane fly (Tipulidae) larva. *Photo: Peter Garrity.*

Back cover: John Bowers (left) sitting outside the Guest House which is also the HQ of the Friends of Green Lesbos. He spent several weeks here each year (see p157). *Photo: Joyce Simmons.*

The Naturalist

Breeding Avocets in Yorkshire and Lincolnshire: the return of the native?

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Introduction

Hugh Reid was a respected and well-known taxidermist-dealer, ornithologist and lepidopterist. Although a native Scot, he was in business in Doncaster from c.1813 almost until his death in 1863. Of all the specimens he purchased, among the most noteworthy were the eggs of one of the last historic English pairs of the Avocet *Recurvirostra avosetta*. These eggs have sometimes been referred to as the last. They were on the Yorkshire–Lincolnshire border at the mouth of the River Trent, where its confluence with the Ouse forms the River Humber. The year was sometime around 1840, but being documented c.20 years later it was never accurately recorded in print. It became settled around three different years: 1837 (e.g. Nelson, 1907; Gardiner, 1923), 1840 (e.g. Clarke, 1881; Cordeaux, 1899; Blathwayt, 1915) and 1845 (e.g. More, 1865; Moffat, 1898).

Avocet

photo: Pauline Greenhalgh



The **first purpose** of this paper is to scrutinize the facts and circumstances of the Trentmouth claim. The collected eggs have never been traced, and the information entirely emanates from Hugh Reid as the taxidermist-dealer involved. It was communicated by him to A.G. More in 1861. The background to Avocet breeding at Trentmouth c.1840 is examined, especially as a Lincolnshire record. The nesting location is described and the known circumstances given. The habitat and tidal influences are investigated, and the role, motivation and reputation of Hugh Reid, and to some extent the collector, are considered. Aspects of the subsequent documentation of the event are probed for further insight, particularly two editions of a work by William Hewitson. Additionally, the chance of fraud is assessed. The **second purpose** is to set the Trentmouth episode in the wider context of Avocet breeding in Yorkshire and particularly Lincolnshire. Also described is the return of Avocets as English breeding birds in the 1940s. This includes their extension to Lincolnshire in the 1990s. The status of Avocets that have similarly bred in Yorkshire since the 1990s is also considered.

Methodology used for investigating the Trentmouth claim

When examining records from former times, but using modern datasets and our own value-judgements, all information must be reviewed with this in mind. Any understandable imprecision should be given some leeway, and all players require to be treated fairly. An old record should be accepted at face value unless there is a definable reason not to do so. Further, if an individual record does not sit comfortably today, this need not imply fraud. But it does demand a heightened level of scrutiny and the adoption of some overall standards. There are now usable guidelines (q.v.) to assist in the examination of older records.

In an attempt to ensure consistency in its assessment of major records for the British List, the British Ornithologists' Union Records Committee has developed working guidelines for the evaluation of Category B records (BOU, 2018). These latter are defined as those within the timescale 1800–1950, although the guidelines are seen as equally applicable to some earlier claims. However, as this paper aims to show, they can also be adapted for the appraisal of breeding evidence. The guidelines are summarized here:

1. There should ideally be an extant specimen, and/or photograph, and/or adequate description or drawing.
2. There should be a reasonably precise date, including at the very least the year of the record.
3. There should be a credible account of the circumstances of discovery.
4. There should preferably be endorsement by contemporary authorities.
5. There should not be any evidence or strong suspicion of fraud.
6. The chance of natural occurrence should be assessed as greater than that of captive origin.
7. If there is no conformity to subsequent patterns of occurrence, this should be explained.

These working guidelines can form a basis for assessing the Trentmouth Avocets. Although numbers 6 and 7 are irrelevant in this case, the others all have some validity.

The wider English context

Writing in *The Naturalist*, Mudie (1837) described the Avocet as becoming very local, and “in the few situations where it is still found, it is much more rare than it was in former periods”. The English population is not known to have persisted beyond 1842–43, when a Kentish site was abandoned (Brown & Grice 2005). However, towards the end of the 19th century, the mid-1820s was seen as marking the likely end of regular or even all breeding in England. For example, Howard Saunders

(in Yarrell 1884) outlined breeding up to the mid-1820s, but also quoted the Trentmouth record. Later, Saunders (1889, 1899) described nesting as having probably ceased by 1824. Seebohm (1885) put the last reliable evidence at c.1825 and made no reference to the Trent or Humber. It is of interest that regional writers like Cordeaux (1872, 1899), Clarke (1881) and Blathwayt (1915) offered no reference to breeding in the Humber area except that at Trentmouth. However, others went further, asserting or implying that Avocets had once bred as far north as the Humber. As one example, Saunders (1889) stated that the Avocet was “formerly a regular summer-visitor to our shores, breeding in considerable numbers in such suitable localities as the coast and estuaries of the Humber district, Lincolnshire, Norfolk and Suffolk”. This was routinely repeated and became uncritically regarded as an established fact.

Historical breeding evidence from Lincolnshire

In *A Tour in Scotland*, Pennant (1771) referred to Avocets nesting in Lincolnshire. He stated that “Opposite to *Fosdyke Wash*, during summer, are great numbers of *Avosettas*”. This was at the mouth of the River Welland, which flows into the westernmost point of The Wash. In the fourth edition of his *British Zoology*, Pennant (1776) again referred to these Avocets, stating that they were “in considerable numbers in the breeding season near *Fosdyke Wash*”. This statement had not been present in the second edition (1768), and the third edition (1770) has not been seen by the writers. It is known that Thomas Pennant visited Sir Joseph Banks at Revesby in May 1768. Revesby was situated on the northern margin of the Lincolnshire Fens. South-east of the Fens lay the estuarine fringe and beyond it The Wash. Fosdyke was not merely at the margin of the Lincolnshire Fens. It was an entirely separate habitat, only associated by imprecision and generalization. During his visit to Revesby, Pennant “made many observations on the zoology of the country” (Pennant, 1793), and this is assumed to date the Fosdyke Avocets. In the new century, Montagu (1802) stated that Avocets bred “in the fens of Lincolnshire”, a statement seemingly derived from Pennant, one of George Montagu’s sources. Similar allusions to the Lincolnshire Fens continued to be published, but they too may only have been copied. Thus, in his *List of Northamptonshire Birds* (c.1831), the poet John Clare described Avocets as “common in the fens” (Fisher, 1955). However, there is no indication of the source, timing or significance of this. Fisher (1966) described Clare’s location as “the south Lincolnshire - Peterborough fens”. The impression of vagueness remained, even in the 20th century. As one example, Wentworth-Day (1954) remarked:

“Avocets, naturally, were common in the Old Fen, and Camden [1806 edition] records ‘vast numbers’ of them as frequenting ‘opposite Fosdyke Wash’ in his time, and Montagu records them as still breeding in the Fens early in the last century”.

Although not researched in detail here, it appears that there is no actual evidence of Avocets ever nesting in the Lincolnshire Fens (but see below). They were not inhabitants of unreclaimed and working fenland. All such statements perhaps originated from an inaccurate simplification of Pennant’s Fosdyke report, initially for the convenience of George Montagu’s readers.

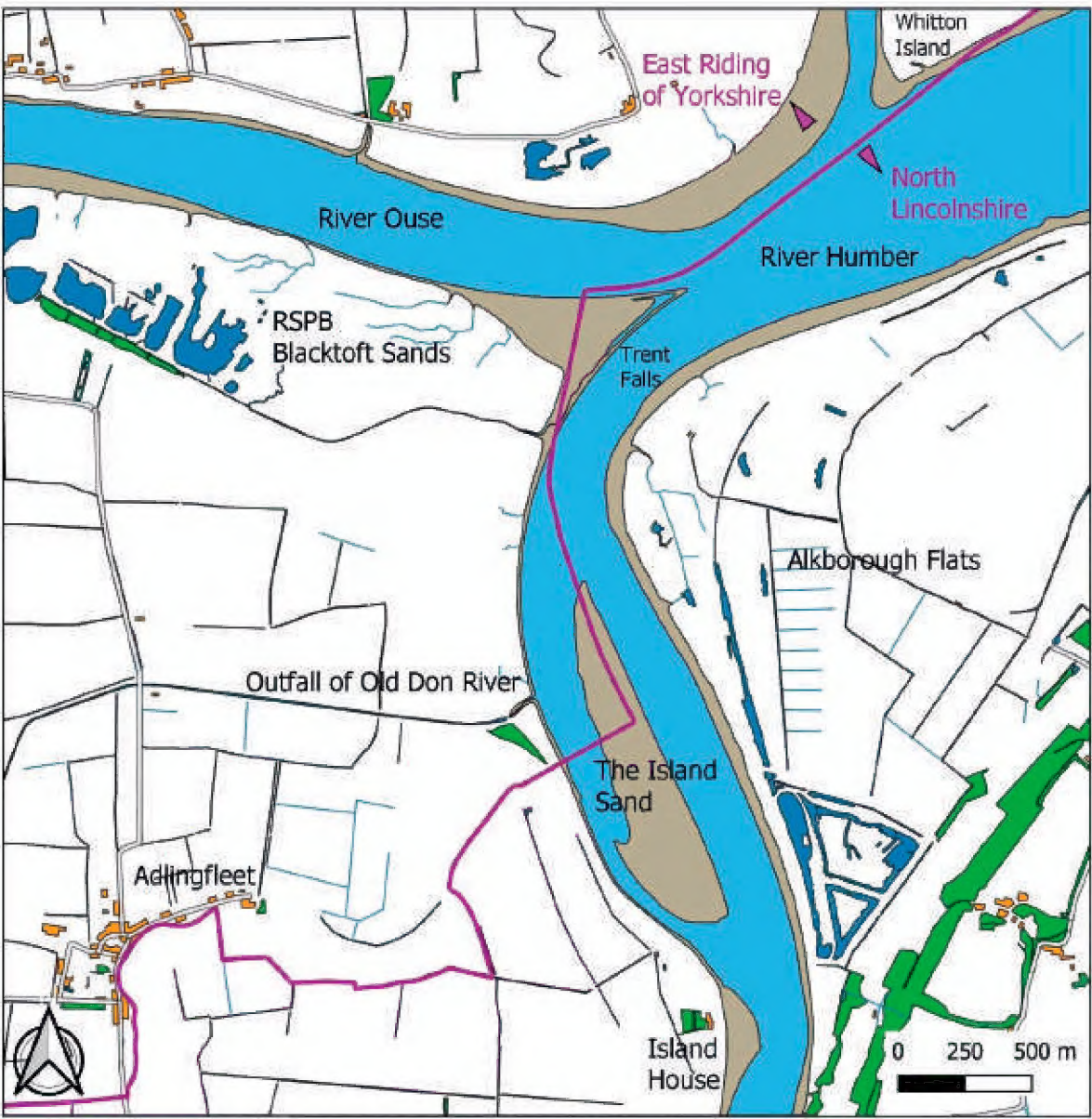
There is one further reference to the Fens. More (1865) included “West Fen in Lincolnshire” in a list of locations “upon record as former breeding-places”. This appears to be new, as in later manuscript notes (published in Moffat, 1898), More separately included Fosdyke, citing the authority of Pennant. The West Fen source is currently unknown. In total, Wildmore, West and East Fens covered 8000 ha north of Boston and The Wash. With its “half-drowned grazing fens and bottomless bog” (Wentworth-Day, 1954), this was a landscape rather than a habitat. But was any part of it Avocet terrain? Sir Joseph Banks was lessee of the manorial rights in these Fens. Their drainage and enclosure became a major undertaking, with the final drainage works completed in 1813.

Location of the Trentmouth claim



Figure 1. Enlarged view of the confluence of the Rivers Ouse and Trent in the early 1820s. From the *Old Series* one-inch Ordnance Survey sheet published 1824. Although not indicated (by the dotted line) beyond Adlingfleet Clough, the Yorkshire–Lincolnshire boundary was extrapolated north-eastwards. It ran from the outfall of the Old Don River, past the clough and along the creek to Trent Falls. It then continued eastwards mid-channel. Trent Island is labelled. An un-named 'sand' stretched from Trent Falls to Trent Island; its southern extremity was detached. Thus, during the early 1820s, Trent Island, the un-named 'sand' and its isolated tip all lay in Lincolnshire. The county division at Trent Falls is marked on some later printings of the sheet, but with the hydrography not resurveyed. Ordnance Survey data Crown Copyright.

Figure 2. A modern view of the mouth of the River Trent and the confluence with the River Ouse. Trent Island (now Island House) is an integral part of reclaimed land on the Trent bank. The former un-named 'sand' opposite the outfall of the Old Don River is still an island. It is known as The Island Sand. Contains Ordnance Survey data Crown Copyright [and database right] 2019.



Sometime around 1840, on the furthest margin of Lincolnshire, Avocet eggs were collected from a “sand island” at the mouth of the River Trent. The Yorkshire–Lincolnshire boundary crosses this area (Figure 1), although it was not recorded in which county the eggs were actually laid. Both have been quoted, either individually or combined, with the respective avifaunas and lists appropriating the record or “sharing the honours”. The Hull sheet of the *Old Series* one-inch Ordnance Survey was surveyed during 1819–22 and published in 1824 (Harley, 1980). It is reasonable to project the mapped situation of the upper Humber, as shown in Figure 1, forward to c.1840. It can be seen that the confluence of the Rivers Ouse and Trent had two features relevant here. The first of these, the sandbanks, were isolated from the river-banks. Each of the named sandbanks was referred to as a ‘Sand’ e.g. Blacktoft Sand. Second, there is Trent Island. A modern map of the same area is shown in Figure 2 p84.

An earlier island existed in the same position, Pierrepont Island, and it seems that these were successive names for embodiments of the same shoaling feature (Peck, 1815; Fletcher & Pearson, 1858–65; Hughes, 1994). Trent Island, which lay within Lincolnshire, was mapped as linked to the nearest land. It was embanked and therefore possibly grazed. Visible within the embankment is a rectangular enclosure and buildings, so the island may have been occupied as a farm.

The circumstances of the claim

In 1861, A.G. More was documenting the distribution of British breeding birds (More, 1865). For this survey he had many correspondents, one of whom was Hugh Reid, as described by Moffat (1898):

“To another old acquaintance, Mr. Hugh Reid, (the Doncaster bird-stuffer who got and described the first ‘British’ Bartram’s Sandpiper) he was indebted for a list which proved of peculiar interest as yielding probably the *last* instance of the breeding of the Avocet in England. Mr. Reid described how he had been brought ‘eggs of the Avocet in the flesh’ from near the mouth of the Humber about 1845, twenty years later than the date from which this ‘Lost British Bird’ (once so abundant) is generally said to have ceased to breed amongst us.”

A.G. More was resident in Doncaster during the winter of 1853–54 (Moffat, 1898). He became involved with the identification and documentation of Reid’s initially unidentified wader, which proved to be an Upland Sandpiper *Bartramia longicauda*. It is reasonable to think that during More’s “many conversations” with Reid (Moffat, 1898) he also learned of the Avocet eggs. It thus remains surprising that the reference always quoted is Reid’s letter penned in 1861, two decades or so after the event and seven years after More was definitely in Doncaster.

All published details appear to be based on that letter. Dated 1st June 1861 (More, 1865; Clarke, 1881; Moffat, 1898), it has never been discovered and may no longer exist. Reid was acknowledged by A.G. More as one who had furnished him with a district list. However, there was also verbal communication, presumably dating back to 1853–54 when More was in Doncaster. For example, More (1865) wrote that Reid “has frequently told me” of the former breeding of Black-tailed Godwit *Limosa limosa* east of Doncaster. Regarding the Avocets, More’s statement was brief, noting that Hugh Reid “has told me that about twenty years ago he obtained the eggs from the mouth of the Humber, which appears to be the last instance of the bird having been found breeding in this country”. This can be misinterpreted as obtained by Reid himself, although the eggs – their number not known – were gathered up by someone else (q.v.). It seems that in this instance, “told me” was by letter. As noted, somewhat later Moffat (1898) mentioned the eggs, stating that c.1845 Reid was brought “eggs of the Avocet in the flesh”. He also copied More’s published error in placing them at the mouth of the Humber. Moffat put his statement about the eggs within quotation marks,

presumably therefore inferring that he had seen the 1861 letter or a relevant transcript. Today, “eggs of the Avocet in the flesh” cannot be fully understood without its original context. If Moffat intended that the eggs themselves were “in the flesh”, this is an expression otherwise reserved, of course, for fresh or at least ‘unpreserved’ bird corpses. It has to be assumed that the comment was meant to convey unblown eggs. This interpretation is endorsed by Jim Whitaker (pers. comm.), who has never otherwise encountered the term.

Greater detail was given by Clarke (1881) and repeated by Nelson (1907), except that Nelson dated the eggs earlier. The former stated:

“The last instance in which the Avocet is known to have nested in Britain, was at the mouth of the Trent, about the year 1840. Mr. Hugh Reid, of Doncaster, informed Mr. A. G. More, in a letter dated June 1st, 1861, that eggs were taken on a sand island at the mouth of the river Trent about twenty years before. There was at the time a spring tide, which nearly covered the island, and the eggs were floating on the water. The man who took them shot one of the parent birds at the same time, and brought the eggs to Mr. Reid. The island had patches of grass growing on it, and there was always mud and warp about it – a likely place for the bird to feed on. The county boundary being at this place drawn in the centre of the river Trent, Yorkshire will share with Lincolnshire the honour of possessing the last British breeding-station.”

This is crucial information, and is the earliest reference to the shooting of an adult Avocet. It has long been supposed that Reid received the adult, but there is no definite evidence for this. Clarke specified that (only) the eggs were brought to Reid. However, it is possible that it was actually the adult that Reid received “in the flesh” along with the eggs. Further, the dating of the record to “about twenty years before” is open to question. Reid was 79 years old when he responded to More. There is no evidence of taxidermy ledgers or diaries kept by Reid. Thus, the remark may have been somewhat vague, the recollection of an old man struggling to recall the timescale in a career that spanned half a century. His “activity and liveliness...up to a comparatively short period preceding his death” (*Doncaster, Nottingham, and Lincoln Gazette*, 26th June 1863) is probably misleading in relation to his ability to rely on memory. We follow Clarke (1881) in dating the occurrence to c.1840, but have to accept that the margin of error could be quite wide.

In Clarke & Roebuck (1881), A.G. More was one of the authorities acknowledged for replying to queries. He must have lent, copied from, or referred to, the 1861 letter. It was stated that the nesting location was a sand island, with permanent vegetation restricted to patchy grass. These indicate that it was not Trent Island. It must therefore have been the un-named ‘sand’ to the north, which could have been reachable for someone with a punt. The ‘sand’ was mapped during 1819–22 as lying entirely on the Lincolnshire side of the county divide (Figure 1). There is no reason to believe that this would have changed by c.1840. If the cartography is accepted as relevant to that time, the breeding record has to be ascribed to Lincolnshire.

Habitat and tides

There are significant problems with the Trent location for Avocets. The birds usually nest in association with shallow lagoons which may be saline, brackish or fresh water. They will nest elsewhere e.g. saltmarsh, but proximity to lagoons where chicks can feed seems to be a prerequisite. Avocet chicks hatch asynchronously over a period of 24–48 hours, so suitable feeding areas for them close by are essential. One adult can be with the early hatchers while its mate continues to incubate (Gilbert *et al.*, 1998). A riverine sand island without a lagoon would be an unusual nesting place. Clarke (1881) referred to the sand island but then added that there was “always mud and warp about it”. Did he imply that these deposits were attached to the island, or only that they were in the general vicinity?

His statement may be (over?) interpreted as natural and artificially-induced alluvium respectively. Behind the river-banks there were no warping drains in that area (Gaunt, 1994), and therefore no warping-works with pools, which it is known attracted feeding waders (e.g. Limbert, 1983). Although unclear, perhaps the habitat intended was just mud and silt, and maybe these were not associated with the island itself but formed the river-banks. If so, none of this would have benefitted unfledged chicks stationed mid-channel.

Clarke (1881) alluded to a spring tide inundating the sand island, with the eggs floating in the water. Some birds e.g. Ringed Plover *Charadrius hiaticula*, Little Tern *Sternula albifrons*, do nest in areas that can be susceptible to very high spring tides. But their eggs are usually laid above the level of all but the worst tides. The main month for Avocet eggs is May, and extreme tides are not usual during the breeding season. Astronomical influences interact to create a predictable 18.6 year cycle when tides can be unexpectedly high. They also induce troughs, again 18.6 years apart at maximum, when tides will be lower than expected. From the experience of breeding bird surveys (Melling, pers. obs.), saltmarsh-nesting birds are washed out by very high tides perhaps once every 20 years. This accords with the underlying tidal cycle. Although there is no exact date for the Trent Avocets, the period 1837–40 was during a trough, when tide heights would have been low. The peaks in the cycle, when excessive flooding would be more likely, were around 1830 and 1849. Thus, although such flooding was always a possibility, it would have been abnormal in the period around 1840. Strong winds can also influence the height of a tide, but floating eggs would be especially difficult to see and recover in windy conditions.

Clarke (1881) said that the eggs were collected while floating in the water. In general, the amount of egg showing above water is proportionate to the advancement of incubation. In fresh water, fresh eggs sink and incubated ones are buoyant, although the latter would still be mostly below the surface. In brackish water, fresh eggs will stay afloat (J. Whitaker, pers. comm.). As drifting eggs, the Trent clutch would disperse quickly on the tide, both from the nest and from each other. These mobile eggs would have been individually hard to spot, being virtually submerged in flowing, turbid river water. It was claimed that an adult Avocet was shot at the same time as the drifting eggs were collected. Such a bird would not have stayed to defend a clutch swamped by a rising river level. Thus, it is not clear how the collector established a link between the shot Avocet and the eggs. Other birds, especially Northern Lapwing *Vanellus vanellus*, have eggs that are superficially similar to those of the Avocet. Lapwings usually lay earlier than Avocets, but are also single-brooded. When compensating for egg loss, replacement Lapwing clutches can be laid into May. There is a possibility of Lapwing eggs being involved here, although a sand island would be as unlikely for nesting Lapwings as for the rarer species. Further, birds towards the edge of their range – as the Avocets would have been – tend to become more specialized and exacting in their requirements. A pair of Avocets at the limit of their range would probably not favour any kind of atypical nesting ground.

Hugh Reid and the collector

As part of his business, Hugh Reid sold British birds' eggs, but they had only minor prominence in his newspaper advertisements. This began in 1834 and was most frequent in the 1840s. Avocet eggs clearly represented premium stock for Reid, although he is not known to have received the shot adult as well. Assuming that this bird actually existed – and was successfully retrieved – we do not even know if Reid saw it. Details of the circumstances and the specimens must have come from the collector. However, there are a number of issues. First, nothing is known of the collector. He clearly intended to profit from his haul, and he was motivated (or advised) to get it to Hugh Reid. The latter worked in Doncaster, over 30 km away by horseback from Trentmouth. Social convention at that time might not have acknowledged a shooter or collector who had a labouring or trade

background, but others would probably have been accorded some recognition. It is not known where the collector actually lived; what his interest or reputation in birds was; or whether he had a knowledge of eggs. There are also other uncertainties. For example, was he professional in any relevant way? Was he an existing supplier? Was he regarded as trustworthy? Or was he an unknown opportunist who got lucky with Reid? It may even be speculated whether the sand island location with its “patches of grass” was a figment, intended by the collector as plausible embellishment. It could still have been based on Trentmouth knowledge. Additionally, it seems odd that Reid may not have been offered, or did not acquire, the putative parent as well, especially given his renown as a dealer and “crack” stuffer (Mosley, 1909).

In contrast to the collector, we know much more about Hugh Reid. One of us has been seeking information for many years (Limbert, unpubl.). Why did Reid seemingly not communicate the breeding Avocets to anyone until 1861? There was no business advantage in delaying, and he would have known that the eggs had some ornithological importance. Inserting here a note of caution, there is always a danger of imposing a 21st century perspective. In Reid’s time, meticulous recording of provenance, and the imperative to inform, were not ingrained as they are now. In general, Reid responded both personally and by letter to requests and queries. Thus, he furnished information for the Doncaster newspapers. As a further example, he cooperated with those interested in the minute documentation of eggs and skins of the extinct Great Auk *Pinguinus impennis*. However, setting aside advertising in the local press, there is virtually no evidence that Reid ever initiated anything ornithological. The Upland Sandpiper is an exception. Also, he published next to nothing. Did it simply take around two decades for someone to ask the right question, or at least to put something into print? It seems that A.G. More did not ask the question in 1853–54. Even so, it remains perplexing that Reid volunteered nothing to him. It is reasonable to assume that it was on the strength of their earlier contact that More felt it was worthwhile to communicate with Reid in 1861.

As for the eggs themselves, Lapwing’s are variable in size, ground colour and markings. Avocet eggs can fall within that range of variation, but are more oval and on average a little larger. It must have been difficult with the resources to hand c.1840 for Hugh Reid to know if the Trentmouth eggs were truly Avocet. Of some help, Lapwing eggs were familiar and even collected as a food source. Reid could have been routinely purchasing differing examples as resaleable specimens, giving him direct awareness of variants.

As a taxidermist-dealer and naturalist, Hugh Reid appears to have been entirely reputable. However, Reid’s believed honesty does not automatically absolve him of incaution or gullibility. In later life, Reid was described as “one of the leading naturalists in Yorkshire and the surrounding counties” (*Gazette*, 9th December 1853). Posthumously, he was remembered as “well known and esteemed by the most distinguished naturalists of the present day” (*Gazette*, 26th June 1863). Nelson (1907) wrote that Reid was “a first-rate and thoroughly reliable ornithologist”, although Nelson himself cannot have met him.

Aspects of Yorkshire literature sources

The early documentation of the Trentmouth event is primarily from Yorkshire sources. F.O. Morris, in the first list of Yorkshire birds, wrote of the Avocet, “Several have been shot on the Humber. Also on other parts of the coast” (Morris, 1840). This statement is datable to 1836–37, when Morris lived in Doncaster. He did not revise his list between compilation and offering it to a Doncaster newspaper in 1840 (Limbert, 1992). Morris’s list partly originated from Hugh Reid, who was acknowledged by Morris under several species. The Avocet comment may have been earlier than the reported eggs,

with Morris's Yorkshire list the only one to predate the breeding claim. Morris's attitude to Reid was laudatory, so he was unlikely to ignore an instance of Avocet breeding associated with Reid. Allis (1844), in the second county list (see Nelson, 1907), similarly made no mention of Avocet breeding. Clarke (1881) and Nelson (1907) could only repeat the old record and referred to its shared county possession. As noted, Nelson (1907) put the year earlier than Clarke (1881) but, unlike many Yorkshire species, he offered no dialectal names for so distinctive and vocal a bird. However, he did state that the species "was formerly not uncommon in Yorkshire, when the mud banks of the Humber and the adjacent marshes and Carrs of the East Riding afforded a congenial environment to birds of this class". Nelson detailed individual Avocet occurrences and references, but gave no source(s) for his East Yorkshire observation. Maybe the statement had been expressed verbally by one or more Humber fowlers, or it was a local naturalist's considered opinion. In another Yorkshire list (Grabham, 1907), the author's implication of "Cobb[l]er Awl Bird" as a local Avocet name seems spurious. Nationally, "Cobbler's Awl" was widely quoted as a Norfolk provincialism, from Montagu (1802) onwards (Swann 1913).

The statements by William Hewitson

There are intriguing entries in the first two editions of Hewitson (1838, 1846). In the first of these, the *British Oology*, there is a reference to eggs, "said to be those of the Avocet". These were in the collections of T.H. Allis and Henry Baines, both of York. Today, neither collection recognizably survives. These eggs were marked with small spots of deep brown and neutral tint, with the ground colour being atypically nearly white. They were probably from the same laying, as scientific collectors at that time did not necessarily collect in clutches. These two collectors are possible (and were perhaps then preferential) recipients of the eggs acquired by Hugh Reid. Allis was a known favoured buyer of Lepidoptera from Reid, and also obtained ornithological information from him. There is no known direct connection between Reid and Baines. However, it should be underlined that there is no reference to the Avocet record in Allis (1844), and this must be significant. If Allis was aware – or even an owner – of the eggs, the record would surely have featured in his county listing. It may be added that William Hewitson lived in York for a period up to at least 1828 (Mullens & Swann, 1917). Therefore, he might have retained some contact with fellow collectors there. For example, he had a known friendship with the York collector J.H. Tuke. *British Oology* was issued in parts during 1831–38 (Mullens & Swann, 1917), but it has not been possible to learn the date of the part containing the Avocet. Notwithstanding this, it is obviously prior to our working date of c.1840.

Doubt about these cabinet eggs is deepened by the account of Avocet in Hewitson's second edition, the newly titled *Coloured Illustrations* of 1846. The earlier reference to unusual Avocet eggs was omitted, but referring to Lapwing, Hewitson stated that "Some years ago, a very light and singular variety of the egg of the peewit – the ground colour nearly white, with small black spots, – was in collections as that of the Avocet". Did the person who came across the "light and singular" eggs have sufficient oological knowledge to see an opportunity for fraud? Alternatively, if they were misidentified as Avocet, there must again have been a profit motive, otherwise the eggs were unlikely to have reached collectors. Thus, were these the Trentmouth eggs, or are they just too early? As a final point, was Hugh Reid aware of the content of the Hewitson editions? They were pioneering and highly regarded, and in his circumstances Reid probably was. Regrettably, it is not possible to draw out anything conclusive from this.

The chance of fraud

Deception may often be complex, embracing both internal reward (in the mind) and external reward (material gain). Writing generally, Harrop *et al.* (2012) noted that the ornithological record was undoubtedly being manipulated by 1822. Fraud was strongly suspected from earlier years. In

the 19th century, with the rise of commercial taxidermy and trade in birds' eggs, these became the main conduits for fraud, perpetrated mainly for maximizing external reward.

In examining the Trentmouth Avocets, the recorded circumstances are implausible and look fabricated. If a single adult Avocet reached Hugh Reid, it could easily have been a wild bird, though it might simply have been collateral weight in a consignment of game to Hull or Goole. The real issue lies with the eggs. The chance of being able to combine a shot Avocet with Avocet or Avocet-like eggs was vanishingly small. The only real possibility is a form of Lapwing eggs, which might have been enough, at that period, to fool even someone like Hugh Reid.

The popularity of egg collecting greatly increased in the 1830s, and monetary values escalated in scale. A European trade developed, including Avocet eggs by the early 1840s (Yarrell 1843). Authenticating the identification of eggs is frequently impossible, and deceit can be relatively easy (Limbert, 2003). Authenticating provenance can also be challenging. Further, around 1840 knowledge of egg morphology and variation was still somewhat rudimentary. Today, seeking an explanation for those eggs is futile. In modern jargon, there are only known unknowns. Different scenarios can be constructed, but there will be no resolution. With nothing to suggest any duplicity in Hugh Reid's career, suspicion falls on the collector. But is it just easier to project mistrust towards an anonymous man? This underlines the impossibility of trying to seek any kind of closure here.

The BOURC working guidelines revisited

It is impossible to resolve the Trentmouth claim from surviving evidence; it can only be appraised against a structured set of criteria. Hence, invoking the seven BOURC guidelines is a way of making an assessment of the issue. The first five guidelines have relevance, but the remaining two do not. Taking this further, it is inescapable that the breeding assertion fails on all five of the applicable guidelines. There are no specimens or other corroboration. Not even the year is certain, and the account of the circumstances is implausible. Also, there was no contemporary endorsement, and the questionable nesting and associated details remain worrying. Little is verifiable and the cumulative impression is negative. All that is certain is a pervasive feeling of doubt.

Breeding in England in the 20th century

A century on, Avocets came into unaccustomed prominence, not just with bird-watchers but, for a time, in a wider consciousness. In the 1940s the Avocet began to re-establish itself as an English breeding species. Significantly, from 1947 this striking bird and the circumstances of its return captured public imagination. The bird also caught the post-war mood; it was another repatriated Briton. Indeed, the Avocet's presence was largely as a result of wartime conditions on both sides of the North Sea. Here, "courtesy of Hitler" (Mead, 2000) recolonization began on the Suffolk coast, with the population then expanding and spreading (e.g. Brown, 1961, 1962; Davies, 1962). The RSPB forged a central role in the unfolding story (Cadbury *et al.*, 1989), and aided by shelter and management the Avocets endured. In post-war England they could assume their old status, and late in the century breeding Avocets reached Lincolnshire and then Yorkshire.

As indicated, Saunders (1889) listed the Humber district as a breeding location for the Avocet. Stating its former breeding range as extending north to the Humber became a mantra that has persisted to the present day. Cocker & Mabey (2005) claimed "Today there are at least 650 pairs breeding along the east and south coasts of England from the Humber to Dorset, which represents a more-or-less complete recovery of its old eighteenth-century range". In that same year, Brown & Grice (2005) described the Avocet as having "formerly bred along the English coast between the Humber and Sussex". Nevertheless, the past *evidence* for the entire Humber has only ever amounted to versions

of that from Trentmouth. The river/estuary has seemingly been populated from this one supposed clutch. In describing the known historic breeding range (and setting aside Lincolnshire's West Fen), past authors should have placed their Avocets as far north as The Wash and no further.

After the 1760s, and setting aside c.1840, no certain breeding by Avocets from any part of Lincolnshire emerges until the 1990s. Nesting began with a pair in 1991, and became more frequent from 1998 (Goodall & Atkin, 2000; Eastmead & Goodall, no date; Short, 2011). The 1991 location was not disclosed (Catley, no date a), but Read's Island in the Humber was central to recolonization (Eastmead et al., no date; Short, 2011. See also Howes, 2020, p98 of this issue).

Breeding in Yorkshire followed. In the 1989 *Report* for Blacktoft Sands, the RSPB warden wrote of Avocet, "A good year for this species, a prelude to breeding colonisation perhaps" (Grieve, 1990). By then, the way forward was probably inevitable. In Lincolnshire, a pair at Read's Island in 1992 was driven away by spring tides. These birds were thought to have relocated to the Blacktoft reserve, just over the county boundary (Catley, no date b). Here, a pair raised two young (Grieve, 1993) and the bridge-head was successful: by 2005 there were 75–80 pairs at three Yorkshire sites (Dobbs, 2008). As a nesting bird, the Avocet was regarded as returning to the county (e.g. Grieve, 1993; Curtis, 1994; Wilson & Slack, 1996). It is interesting that the first modern site should be Blacktoft Sands (the RSPB added the 's'), though it is no longer a sandy island but has a series of shallow brackish lagoons. Yet, as suggested, the known evidence of former occupancy in Yorkshire is vague and unsatisfactory. There can be no basis for saying that the Avocet once bred in the county. Logically, therefore, the bird cannot be declared to have returned a quarter of a century ago.

There might have been breeding Avocets in Yorkshire's distant past. There may have been attempts to nest along the Humber in the 1980s (Wilson & Slack, 1996). But hard evidence currently puts the first credible Yorkshire breeding at 1992 (contra Brown & Grice, 2005). In contrast to Lincolnshire, there is simply no reasonable proof that this represented the return of a native.

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The Saga of Read's Island and the Mystery of its 'Fossorial' Water Voles

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Introduction

Read's Island is situated in the Humber estuary downstream of the Ermine Street Roman crossing near Winteringham Haven (SE936230) and upstream of the mouth of the river Ancholme (SE975210). It is currently suffering major erosion, most of its former above-water topography having been re-disbursed to the Humber bed since the 1950s. The Island's centre point, as calculated from the 1995 edition of the Ordnance Survey Landranger sheet 106, was approximately SE965218. The Island's origins, its management as pastureland, as a wildfowling venue, as a nature reserve and its final erosion phase are reviewed in Part 1.

A zoological curiosity manifested itself in 1896 in the form of a 'plague' of what were described as 'rats'. These were subsequently revealed to be the 'fossorial' or burrowing, dry grassland, non-riparian form of Water Vole *Arvicola terrestris*. Water Voles are known to have colonised Britain prior to its separation from the continent, initially from a glacial refugium in Iberia, followed much later by immigrants from a glacial refugium in the Balkans. Tissue analysis has revealed the Read's Island population, thought to have died out shortly after the 1890s, represented a survival of the initial Iberian colonists. Their arrival on the island and possible survival up to the 1980s is discussed in Part 2.

Part 1: Origins of the island – post-glacial background. The location of what became Read's Island was part of the bed of the pro-glacial Lake Humber, off the Ancholme Vale, immediately to the west of the Humber Gap. The adjacent shoreline at South Ferriby shows the underlying sediment to be silt of lacustrine or solifluction origin over glacial till resting on a planed chalk surface (Straw, 2016). The sequences and chronology of events in the Humberhead region from ca. 24,000 to 12,000bp are reviewed by Bateman *et al.* (2017). The development of the Humber as a tidal estuary with an availability of sediment leading to mud-bank and ultimately island formation have only become possible well into the Holocene period after Britain had become separated from continental Europe, the North sea had risen to reach the Yorkshire/Lincolnshire coasts and the lower reaches of Humber tributary rivers were carrying significant burdens of sediment.

Britain became separated from the continent when Doggerland was catastrophically inundated by the Storegga Slide tsunami ca 8,200 BP (Weninger *et al.*, 2008). Even by 7,500bp the mean North sea level was only at -11m OD (Kirby, 2001). However, dated sediments from bore cores at sites in the lower Aire catchment showed that organic silts were being deposited from 5,000 BP to 2,800 BP (Kirby, 2001) and by 4,500 BP fen peat was forming in the floodplain of the Don at Thorne Waterside (SE61) and Crowle (SE71) and in the river Idle at Misterton (SK79) (Buckland & Dolby, 1973). This indicated these formerly deeply incised river courses were backing up through a combination of tidal effect and congestion from high volumes of sediment run-off, possibly through deforestation and Neolithic farming in upland areas. Conditions within the Humber were thus progressing towards enabling the creation of mud-banks and islands. Gaunt

et al. (1992) describe the “Tidal Flatt Deposits” which form the Humber mud/sand banks and islands as “soft waterlogged greyish brown silty clay which is continually being eroded and redeposited”.

Early Cartographic history: Sequences of Humber surveys over the past three centuries show that the positions, shapes and sizes of sand/mud banks have varied considerably according to the ever changing tidal estuary flow channels and the progressively increasing North Sea mean sea level. Thomas Surbey’s 1699 survey of the Rivers Ouse and Humber (Hughes, 1994) shows that between North ferybye [North Ferriby SE9825] on the Yorkshire shore and South ferybye [South Ferriby SE9821] on the Lincolnshire shore were three sand banks. These are indicated ‘x’ ‘y’ and ‘z’ on his plan which according to the accompanying legend are respectively ‘North ferybye Sand’, ‘Rand Midle’ and ‘South ferybye Sand’. Since these are also identified in the legend as ‘all Dry’ it is presumed they represent islands, remaining dry even at high tides. The sand bank marked ‘z’ on Surbey’s plan is closest to the location of the current Read’s Island and may therefore represent its precursor.

An island in the same location is shown on the 1734 Customs Map of the Humber under the name of ‘Old Warp’, no doubt due to the nature of its tidally accreting substrate. Being close to the settlement of South Ferriby it was also referred to as Ferriby Sands.

Local folklore suggests that prior to 1750 the wreckage of a French Schooner accelerated the deposition of silt on this mud/sandbank; a situation further assisted by the scuttling of a redundant wooden naval ship filled with rocks to re-inforce the island’s southern bank (Carey, 1997).

Between 1819 and 1822 the region was surveyed on behalf of the Ordnance Survey by a number of field surveyors including Charles Budgen and E.B. Metcalf whose signatures appear on draft copies of the map in the British Museum (Harley, 1970). The island is shown on OS Sheet 86 (Hull) first published 1 March 1824 (Harley *loc. cit.*). By this period it is depicted as a substantial body named ‘Ferriby Sand’ or ‘Old Warp’ which presumably having amalgamated Surbey’s ‘Rand Midle’ and ‘South ferybye Sand’ extended for a distance of 4 miles 330 yards from its westerly point off Winteringham Haven (SE936231) to its easterly point off Chowder Ness (TA007234) [Shoulter Ness on Surbey’s 1699 plan] and had a maximum north south width of 1 mile 330 yards. At this stage the Yorkshire/Lincolnshire county boundary which describes an approximate centre line along the Humber estuary, passed through the island, indicating that the northern third of its mass was in the old East Riding and therefore within the biological recording Vice County 61 (see Figure 1, p96).

Accretion phase and grassland management: Carey (*loc. cit.*) noted that “by 1820 much of ‘Old Warp’ island was green topped, which no doubt was used for summer grazing...”. During the 1830s the Read brothers of Burton-upon-Stather, became tenant graziers and proceeded to enlarge the island by the process of ‘warping’, trapping successive depositions of tidal silt (Carey, *loc. cit.*; Horan, 2010).

In 1836 a shepherd was employed to manage a flock of sheep on the 40 acre [16.19ha] embanked permanently exposed grassland. By 1841 the grazed area had been extended to about 80 acres [32.37ha] (Horan, *loc. cit.*; Internet notes 1 & 2). In 1842 the island was visited

It was let to R. and H.C. Ford for £520 and around 1900 the island was farmed by the Kirkby family (Horan, *loc. cit.*), and Payne-Gallwey (1896) enthusiastically described the island as being 600 acres [242.8ha] of very rich valuable land (grass and clover).

German prisoners of war reinforced parts of the flood embankments in brick during the 1914-18 war (see internet note 1). Other more exotic material additions to the island include the twin-engined monoplane the Airspeed AS.10 Oxford No. 15 PAFU from RAF Kirmington which crashed 21 May 1942 (Carey, *loc. cit.* & internet note 4); and an unexploded V1 rocket launched from a Heinkel 111 during a raid on Manchester 24 December 1944 (see internet note 1).

Read's Island as a Wildfowling mecca: After World War II the island became recognised as a significant wildfowling venue and was purchased by the estate of Sir Joseph Nickerson of Rothwell, North Lincolnshire, to be managed mainly for wildfowling. A shooting lodge was built to accommodate seasonal shooting parties and from 1951 to 1958 the island was managed by Mr & Mrs Duncan Campbell and their schoolboy sons Archie and Sandy.

Reminiscing about his childhood on the island in the 1950s Archie Campbell remarked that in spring, ground-nesting birds “were nesting everywhere, these including Peewit, Redshank, Skylark, Coot, Mallard, Teal and Curlew”.

In the winter when the island entertained the Nickerson wildfowling parties there were “people, guns, dogs and stories of great shoots ... Wigeon were the most numerous ducks along with mixed bags of Mallard, Teal and odd Shoveler and Pintail. Geese were also plentiful especially Pink-footed. What a sight it was to see clouds of them free-falling hundreds of feet out of the sky, zig zagging down to land gracefully on the vast mud banks that surrounded the island ... I vividly recall seeing Peter Scott's autograph in the visitor's [Game Bag] book where he 'dabbled' a few dots down to form a perfect flight of geese, such was his great talent” (Carey, *loc. cit.*). In writing the foreword to Radley and Simms' (1970) study on Flooding in the Vale of York/Humber-head region Peter Scott clearly thought highly of the Humber and lower Derwent as a Wildfowl Refuge. In January 1959 Read's Island featured on the BBC Northern Home Service in an edition of the North Countryman when Mr & Mrs Forester and their two daughters were in residence (Carey, *loc.cit.*; Horan, *loc.cit.*).

With wildfowling being the primary interest of the owners, this reflected in the job titles and duties of the island employees. Thus from 1969 to 1986, Roy Chapman was gamekeeper, shepherd and general handyman and his wife Dorothy was cook for the autumn/winter wildfowling parties (Horan, *loc.cit.*).

Read's Island as a Nature Reserve: The Royal Society for the Protection of Birds acquired the island in 1998, with a view to managing it in conjunction with the Lincolnshire Wildlife Trust for nesting sites and saline feeding lagoons for a developing population of Avocets. Typical associated species were Greylag Geese, Pink-footed Geese, Wigeon, Marsh Harrier, Lapwing, Curlew and Golden Plover (see internet notes 1, 2 & 5).

The RSPB, LWT and the Environment Agency created a series of saline lagoons which in four years resulted in the formation of one of the largest and most productive Avocet breeding colonies in the UK. Sadly the floods of 2007 destroyed the necessary bunds and lagoons,

resulting in the temporary collapse and disbursal of the colony (see internet note 5). After the restoration of the 7ha of saline lagoons in September 2009, that autumn saw the passage of Wood Sandpiper the return of 500 Teal, a flock of 50 Twite and a wintering flock of about 900 Avocets. During the 2010 breeding season 250 to 300 pairs of Avocets re-established (representing approximately 15% of the UK population) producing about 300 to 400+ young (see internet note 5). Read’s island now attracts internationally important numbers of Avocets in autumn with 2,700 birds counted in September 2018, colour ringed birds showing that they had gathered here from breeding sites throughout the UK and Europe (Short, 2019).

The island had remained at around 400 acres during the first half of the 20th century. This is believed to have been achieved through diligent maintenance of the flood banks. Then an enlargement of the Redcliff Middle Channel resulted in the progressive erosion of the outermost northern banks (Carey, *loc. cit.*). The Great East Coast flood of 31 January to 1 February 1953 which, by a combination of high tides, exacerbated by a low pressure (985mbar) weather system working down the North Sea that generated storm force winds, created a tidal surge up the estuary which overwhelmed the sea wall at nearby Grimsby and reached 16.6ft O.D. at Goole which itself is only 18ft, O.D. (Radley & Simms, 1970). This showed the island as a working farm to be particularly vulnerable to such events.

During a tidal surge on 11 September 1987 the last human occupants, Les and Jenny Burbridge had to be evacuated when all but 30 acres of the Island was inundated and an estimated 100 acres was lost during that one event (Horan, *loc.cit.*). The house and shooting lodge were demolished at the request of the Humber Conservancy, to prevent their structures becoming a shipping hazard. Archie Campbell revisiting the island some 40 years later, noted that it was “barely a quarter the size it used to be” during the 1950s (Carey, *loc. cit.*). In February 1996 the highest tides for many years “tore yet another huge chunk of land from the north end” (Carey, *loc. cit.*). Floods of 2007 inundated the island, destroyed the northern bunds and reduced its area to an estimated 200 acres (see internet note 5). During the Humber tidal surge of 5 December 2013, the entirety of Read’s Island was inundated together with some 7,000 ha of land, along the Humber shore. This was the highest surge since 1953 with peak water levels of 5.2m at Immingham and 5.8m at Hull (Mason & Winn, 2014). Since Read’s Island was only deemed to have an altitude of 3.5m OD, the rising mean sea level and the increasing regularity and savagery of tidal storm surges seem to have placed the site in the terminal phase of its topographical cycle.

Table 1, based on figures provided in Payne-Gallwey (1896), Sheppard (1912), Carey (1997), Horan (2010) and internet notes 5 & 6, provides an approximate review of the accretion and erosion cycle affecting the grassland on Read’s Island 1836 to 2009.

Table 1. the rise and fall of grassland on Read’s Island 1836 to 2009.

Year	1836	1841	1861	1896	1950	1987	2007	2009
Area (acres)	40	80	491	600	400	300	200	24.7
Source	Horan (2010)	Horan (2010)	Sheppard (1912)	Payne-Gallwey (1896)	Carey (1997)	Horan (2010)	Internet note 5	Internet note 6

Part 2: The Read's Island 'Fossorial' Water Voles and the origins of these post-glacial clade 1 colonists. Published references to mammal occurrences on Read's Island are few. John Cordeaux (1886) lamented the absence of a published list of Lincolnshire mammals in general but in remedying this Arthur Smith (1905), in the first county list provided no allusions to Read's Island.

Rat 'Plague' on Read's Island. J.G. Millais (1905) (son of the celebrated 19th century artist) in his mighty three volume Royal Quarto format work *The Mammals of Great Britain and Ireland*, and on which the following narrative is largely based, reviews the extraordinary phenomenon of a plague of Read's Island rodents. His main sources were the *Eastern Morning News* (29 Feb. 1896), Payne-Gallwey (*loc. cit.*) and Boyes (1896).

The island's former lush grazing was reduced by this rodent activity to being "scarce sufficient pasture to feed one rabbit [*Oryctolagus cuniculus*] and the entire island is as brown and rough as a ploughed field from the excavated earth thrown out of their burrows ..." (Payne-Gallwey, *loc. cit.*).

"The Humber Conservancy Commissioners have not yet solved the difficult problem of how to rid Reed's [Read's] Island of the plague of 'rats' that now infest it ... What a few years ago was a splendid pasture land, and sustained thousands of sheep on its rich verdure, is now the home of myriads of rats. It is burrowed from end to end, and so densely populated is this habitat ... it is almost impossible to put your foot down without standing upon a rat-hole. It is only about a year ago that the rats got the upper hand, and the Commissioners have of late been very exercised as to the eviction of their unwelcome tenants" (Millais, *loc. cit.*).

"It was decided to cut openings in the banks which surround the island, and thus let in the Humber waters at spring tide, with a view to drowning mister rat and his numerous family. The openings have been made at considerable expense; the water was let in recently, but not with the result anticipated. As water advanced the rats fled from their holes in tens and hundreds of thousands, and made for the banks which remained high and dry. Many were doubtless drowned by the inundation, but being for the most part expert swimmers [!], the impression made on the numbers of the great army was practically nil" (Millais, *loc. cit.*).

An unforeseen consequence of the inundation solution was that many of the rodents emigrated to the Lincolnshire mainland. "Nightly they swim across in swarms, notwithstanding that the channel between the island and the Lincolnshire coast is at least five hundred yards wide [a huge exaggeration according to contemporary OS maps]. Their 'footings' [footprints] have been observed on the foreshore and their location in fields hard by is certain. The Farmers are however, almost helpless to check them, since they shun the stack-yards and granaries" (Millais, *loc. cit.*). "Adjudging rightly that a day's sport might be had shooting the vermin, a party of gentlemen went down one day in the Commissioners' launch, among them being Sir Ralph Payne-Gallwey, Colonel Burstall, Colonel W.H. Wellstead, Captain [D.E.]Hume (The Humber Conservator), Messrs E. D. Davis, M. Samuelson, H. Saxelbye, E.T. Sharp, Mr Legard and others. Hundreds of rats succumbed to the firing of these gentlemen, but it was manifest that extraordinary measures will have to be taken to rid the island of the pest" (Millais, *loc. cit.*). "The inundation seems to have done little good, and to shoot them down [has proved] an impossibility – Poisoning has been thought of but that is deemed of no value, since the Reed's

Island rat appears to live on the roots of grass and herbs under which he burrows” (Millais, *loc. cit.*).

“In fact the rat of Reed’s Island appears to be a rodent quite distinct from the common rat with which we are familiar. He has a tail and hindquarters like the latter but his head and ears are more like those of the cavy [Guinea Pig *Cavia aperea* porcellus with blunt snout and short ears], while he has a soft furry skin of a rich tawny hue. It is said that in some places this kind of rat is bred in captivity for the sake of their skins, which are a remarkable commodity..... A rat farm with such furry-skinned inhabitants might prove a little gold mine to them [the Humber Commissioners] if it were only exploited?” (Millais, *loc. cit.*). Presumably the writer is referring here to the fur trade in the North American Muskrat *Ondatra zibethica* which was later introduced to fur farms in Europe, the USSR and temporarily in Britain (Lever, 2009).

Fortunately Captain D.E. Hume, of the Humber Conservancy, had the foresight to forward fresh corpses of six of the shot specimens to the Natural History Museum, South Kensington. This confirmed their identity for the first time as Water Vole *Arvicola terrestris* (see Table 2). Thus Blathwayt (1912) in his preliminary list of Lincolnshire mammals was able to report that “Very large numbers of Water Voles [*Arvicola terrestris*] had occurred on Read’s Island in the Humber in 1896”.

Table 2. Four adult male and two adult female Water Voles acquired by the Read’s Island shooting parties on 28 February and 28 and 29 March 1896 were donated to the British Museum (Nat. Hist.) by Captain D.E. Hume, their dimensions (lengths in millimetres) quoted from Barrett-Hamilton & Hinton (1921).

Status	Date	Head and Body	Tail (without terminal hairs)	Hind foot (without claws)	Ear (greatest length)
Adult male	28.02.1896	185	127	33	15
Adult male	28.02.1896	190	123	32	14
Adult male	28.02.1896	194	127	32	12
Adult male	28.03.1896	207	140	37	15
Adult female	28.03.1896	190	123	32	14
Adult female	29.03.1896	194	127	32	12

Characteristics of ‘Fossorial’ Water Vole populations: The behaviours described by Millais (*loc. cit.*) vis. (a) occurring in plague proportions; (b) living in extensive surface tunnel networks; (c) feeding on the underground roots and structures of grasses and herbs; (d) shunning stack yards and granaries, strongly suggest this population to be the terrestrial ‘fossorial’, mole-like form of Water Vole, reminiscent of populations on the continent but which dominated British grasslands prior to the domestication of sheep and cattle (Jefferies, 1999). These characteristics are reviewed as follows.

a) Population cycles. Though cyclic population phenomena are known for vole (*Arvicola* and *Microtus*) populations on mainland Europe, such damaging eruptions, are almost unknown in England (Jefferies, *loc. cit.*). The only previous example of a cyclic plague of water voles

in the UK was reported by Knapp (1829) noting that a large stagnant piece of water (locality not given) was thus suddenly infested one summer with an astonishing number, where none had previously been known, only to disappear the following winter. Payne-Gallwey (*loc. cit.*) indicated that the Read's Island rodent plague took four to five years to build.

b) Fossorial or mole-like tunnelling behaviour. In central Europe the species is less aquatic, burrowing like Moles in pasture, a habit found in few areas in Britain, e.g. on Read's Island in the Humber Estuary (Southern & Crowcroft, 1956) and at Caistor (TA10), also in Lincolnshire, 25km to the south east of Read's Island (Davis, R.A. in Corbet & Southern, 1964). With regard to mole-like tunnelling behaviour it was said in the mid-19th century that Water Vole tunnels were sometimes so numerous as to cause serious damage to embankments and masonry (Barrett-Hamilton & Hinton, *loc. cit.*). These 'land' burrows are tens of metres long and the soil can only be removed from the tunnels by being pushed upwards into 'hills' in a similar way to that used by the Mole *Talpa europaea* (Gurney, 1894). It may thus be caught in regular Mole runs (Thompson & Blagg, 1894). Also, the more the incisors projected forward (pro-odont) rather than being vertical (orthodont) then the greater the efficiency for digging long distances (i.e. more soil is taken out per bite). Such features and behaviour are seen at their most advanced in the fossorial or scherman form of *A. terrestris* in continental Europe (Jefferies, *loc. cit.*).

c) High densities at prehistoric sites. With regard to Water Voles occurring in high densities in prehistoric times, Stubbs (1926) identified large numbers of Water Vole bones from a prehistoric barrow at Dow Low, Buxton, Derbyshire. Greenwell (1877) refers to a barrow in Westmorland where "bones of Water Voles [were] in hundreds – so numerous, indeed, were they that ... the material of the cairn seemed almost to consist entirely of them". In his extensive investigation of Bronze Age Tumuli, Bateman (1861) encountered "many bones of Water Vole" at a site in Monsal Dale. A barrow at Arborlow "covered with innumerable bones of Water Vole" and at Longstone Edge "was as large an accumulation of bones of the Water Vole as we have seen in any barrow".

d) Distance from fresh water. Populations of 'fossorial' Water Voles notably occurred in grassland located far from fresh water e.g. on the sandy sea cliffs at Cromer, Norfolk (Gurney, *loc. cit.*) and breeding on the sand dunes on Drigg Common, Cumbria (Macpherson, 1901). On Snail Down on Salisbury Plain, Wiltshire, 7km from the River Avon, Water Voles constituted 66% of small mammal bones from Bronze Age Barrows (Jewell, 1959). Within the Yorkshire/Humberside region bones, allegedly of Water Vole, were encountered in a Bronze Age burial mound at Wold Newton (TA0472) (Mortimer, 1905) and large quantities of vole bones (not identified to species) were found in a barrow at Weaverthorpe (approx. SE9868) (Greenwell, *loc. cit.*). Since neither of these sites support wetland habitats characteristic of the riparian form of Water Vole, it is possible these bones were indicative of a former Yorkshire Wolds population of the grassland-dwelling or 'fossorial' form.

The history and current distribution of 'Fossorial' Water Voles in Britain: Jefferies (*loc. cit.*), reviewing the history of 'fossorial' Water Voles, quotes an estimated population of over 6 billion inhabiting Britain in the last 12,000 years, representing the most numerous mammal and the main grazing species prior to the Iron Age. He further reflects that competition with man's increasing livestock, particularly sheep, caused rapid and severe losses, commencing in the Iron Age and accelerating during the intensive farming of Roman times. By 1900 the

fossorial form was deemed almost extinct on the mainland, though some island populations evidently survived.

Corbet, *et al.* (1970) knew of populations on the Hebrides but indicated a decline, reporting that those on Eilean na Gamhna and Eilean Creagach, which showed some morphological characters in their dentition similar to those of the fossorial form, had not been seen since 1967. Then in 2003, Telfer *et al.* (2003) identified large populations of fossorial Water Voles on six small islands in the Sound of Jura, and in 2008 populations of fossorial Water Voles were unexpectedly discovered in dry grassland habitats among housing estates in the greater Easterhouse area of Glasgow. These were occupying a number of sites including public parks, gardens, vacant and derelict land and roadside verges (Stewart, 2015; Stewart *et al.* 2018). It is possible therefore that un-discovered populations may still occur in dry grassland sites elsewhere in the UK.

Compared with the more familiar riparian Water Vole populations where densities of 40 to 50 animals per ha have been recorded for populations in reed beds (Strachan & Moorhouse, 2006), fossorial population densities, as described for prehistoric times, were likely to have been much greater. Those on islands in the Sound of Jura had mean densities up to 70 per ha in spring (Telfer *et al.*, *loc. cit.*) and at the Easterhouse, Glasgow sites densities ranged from 40 to 156 per ha (Stewart, *loc. cit.*).

Post glacial Water Vole colonisation of Britain, their origins, arrival times and final distribution: During the Devensian glacial cycle which affected most of Britain and northern Europe, populations of temperate-climate species survived periods of full glaciation by retreating to those southernmost refugia, Iberia, Italy, the Balkans and Greece, which remained ice and permafrost free. Since the duration within these widely separated refugia enabled genetic differentiation to occur (Hewitt, 1996 & 2000), the examination of mitochondrial DNA of faunas dispersing from them during subsequent climatic amelioration, has enabled the refugial populations to be identified and their subsequent migratory progress monitored.

An examination of the mitochondrial DNA of Water Vole tissue has shown that the post glacial re-colonisation of the British area had been undertaken by pioneers from two distinct phylogenetic groups or clades (Piertney, 2005). In order to derive further explanation as to the source and colonisation sequence of the two geographically distinct British populations, Brace *et al.* (2016) examined the mitochondrial DNA of 82 water vole tissue samples from archaeological and modern specimens sourced from Britain and across Europe and these were matched with 27 haplotypes from the Piertney *et al.* (*loc. cit.*) dataset. Where sufficient mandibular material was available (being the largest source of bone) this was subjected to radiocarbon dating.

Four samples show that water voles were present in England during the Pleistocene (Brace *et al.*, *loc. cit.*), one from southern England with the median calibrated date of 27,955 BP, therefore being present before the Devensian Glacial Maximum. Since much of central and eastern Yorkshire, the English midlands, East Anglia and the whole of southern England escaped glaciation during the Devensian, clade 1 Water Voles from the Iberian refugium were able to survive in the southern British area, as demonstrated by one individual dated at 14,621 BP (Somerset) from the Windermere interstadial and one individual dated 12,081 BP (Gwent,

Wales) from within the 'Younger Dryas' cold phase (12,900-11,500 BP), followed by a further six clade 1 samples from English sites dating to the 'Younger Dryas'.

A second (clade 2) wave of colonisation has been identified, consisting of haplotypes from a glacial refugium in the Balkans. These are judged to have entered Britain via Doggerland after the 'Younger Dryas' (Loch Lomond) cold phase (ca. 11,500 BP) but prior to ca. 8,200 BP (Brace *et al.*, *loc.cit.*), when the land bridge between the continent and Britain is estimated to have been catastrophically inundated by the Storegga Slide tsunami (Weninger, *loc. cit.*).

Clade 2 Water Voles in Britain included, three specimens excavated from a Derbyshire Bronze Age Barrow which could by association have dated from as early as 4,500 BP, a sample from Gwent, Wales dated at 2,900 BP and all samples from Roman period sites in England were identified as clade 2 haplotypes (Brace *et al.*, *loc. cit.*).

With regard to the current boundary between the Scottish and English/Welsh genetic clades the Piertney *et al.* dataset showed that apart from Berwick on the Scottish border and the Read's Island samples all other modern clade 1 individuals were from Scotland, whereas samples from Windermere in Cumbria and Scarborough in North Yorkshire belonged to the English/Welsh clade 2. In 2008 in order to refine the modern geographical boundary of the two genetic forms the Environment Agency subjected Water Vole droppings from sites across the North of England to DNA analysis, finding that all samples from Northumberland, Durham, Cleveland and the North York Moors National Park also belonged to the Scottish clade (Pounder, 2012).

The colonisation of Read's Island: Brace *et al.* (*loc. cit.*) suggest that the anomalous clade 1 sample from Read's Island could represent either a relict population of the first phase of clade 1 colonizers or that Scottish voles had been accidentally introduced onto the island at some later date.

With regard to the island relict theory, whereas the fossorial Water Vole populations in the Sound of Jura region of Scotland enjoyed the relative permanence of the solid geology (Corbet *loc.cit.*; Telfer *et al.*, *loc. cit.*), the ephemeral sedimentary topography of the Humber estuary island only dates back to the 17th century and only developed a grassland habitat from the 1820s. Thus there would have been no opportunity for the vole population to have existed here for more than the ca. 70 years prior to its discovery in 1896.

Colonisation by a local source of clade 1 voles: With the totally unexpected discovery in 2008 of the Easterhouse, Glasgow populations (Stewart, *loc. cit.*; Stewart *et al.*, *loc.cit.*), it may be that similar fossorial clade 1 populations may exist, undiscovered elsewhere in the vicinity of Read's Island. The colonisation of Read's Island at some time after 1820 could therefore have originated from a hitherto undocumented relict clade 1 haplotype population in North Lincolnshire (i.e. Caistor (see Davis, R.A. in Corbet & Southern *loc. cit.*). If this was the case, pioneer colonists could have accessed the island (a) either spontaneously by migration under low-tide circumstances when the navigable Humber tidal channel was flowing on the northern (estuary) side of the island, or (b) by pioneer specimens inadvertently transferred via supplies of hay sourced from a hitherto undocumented population in North Lincolnshire.

Colonisation by Clade 1 voles from the Scottish populations: For Scottish animals to have been accidentally marooned on the island sounds far-fetched, though has an air of possibility. The history and archaeology of shipping foundering in the Humber is currently a popular and growing subject (see internet note 3), an example in the context of Read's Island being the Barton Sloop 'Alice Ella' lost 18 March 1907 off the Winteringham Buoy while being towed to Goole, laden with potatoes. Although too recent to have been responsible for the Read's Island 'rat plague', this event is a reminder that the Humber head region is a major potato growing area. To avoid the perpetuation of potato diseases, seed potatoes were traditionally sourced from disease-free Scottish growers, hence the [local] use of varieties prefaced with such Scottish regional names as Arran, Pentland, and Ailsa Craig. The March date of the sinking of the 'Alice Ella' suggests these would have been seed potatoes. The annual bulk importation of Scottish seed potatoes could potentially have provided a regular channel of introduction of clade 1 haplotype fossorial Water Voles. Prior to the development of railway networks in the 1840s, bulk transport would have been via coastal shipping notably from the Forth to the Humber, so the 'Alice Ella' may have provided the vital evidence.

A historically recent, rather than prehistoric, colonisation of Read's Island, followed by a rapid population increase to 'plague' proportions has an interesting precedent in the initial colonisation by House Mice *Mus domesticus* of Skokholm Island, two miles off the Pembrokeshire coast. Anecdotal evidence describes the event in 1903 during the transportation of a young horse in a boatload of straw from the adjacent mainland. A few years later the stow-away rodents had multiplied to the extent of attracting an influx of owls in winter and by 1913, during the building of the Trinity House Lighthouse, it became necessary to proof the building against the 'plague' of mice (Berry, 1964).

Possible survival of the Read's Island Water Vole population to the 1980s: That Read's Island evidently returned to being economically viable grazing land after the 1st World War suggests that the 'rat plague' debacle had been resolved and the rodents removed. Perhaps the prisoners of war (see part 1) achieved more than the building of flood banks? However in considering Dorothy Chapman's anecdotes concerning the hugely abundant 'rats' she encountered while living on Read's Island 1969 to 1986 (see Horan *loc. cit.*), there is a suggestion these may have been survivors of the fossorial Water Vole population. She recalls that the rodents displayed a relative avoidance of farm/built premises, only providing one anecdote of a 'rat' entering the farmhouse. They were predominantly diurnal, had a preference for green vegetables (such as cabbage, spinach and lettuce) from her kitchen garden, replenished nesting material from their burrows, and had what she described as "gorgeous" fur. Dorothy's report of Short-eared owls on the island indicated the availability of a concentration of diurnal rodents for them to prey on. Dave Mouncey of the Environment Agency remembered that during the 1960s, in maintaining the Island's embankments, poison baits were laid to reduce the burrowing of rodents, these he perceived to be Brown Rat and Water Vole (Peter Short pers. comm.). Peter Short, RSPB Read's Island site manager, remembered that during flood conditions in the 2000s, particularly 2007, voles (presumably Field Voles *Microtus agrestis*, but not Water Voles) would concentrate on the vegetation of the remaining embankments.

The mystery of the Read's Island fossorial Water Voles raises many questions which call for further research and field work. Certainly studies of other Humber islands and those of its main tidal tributaries and searches for Water Voles in terrestrial grassland habitats in upland areas

of both North Lincolnshire and East Yorkshire may provide interesting and unexpected results.

The Island's other mammals: Tenants grazed sheep from at least the 1830s and cattle and horses from at least the 1880s. Up to the 1890s between 2,000 and 3,000 sheep and cattle might be seen grazing on the island's then extremely verdant surface (Payne-Gallwey, *loc. cit.*). Stock were expensively transported to-and-fro by barge, though during periods, thought to be on a 20 year cycle (see internet note 1), when the Humber navigable channel switched from the south to the north of the island, it was possible for cattle to cross from the Lincolnshire shore at very low tides. It may have been under these conditions that terrestrial mammals including Brown Hare *Lepus europaeus*, for which the island was locally renowned (see internet note 1), were able to gain access.

In the 1960s when the island was purchased for wildfowling purposes, to avoid the expense and practical difficulties of seasonally transporting stock, these were replaced by a resident herd of Fallow Deer *Dama dama* for the purposes of managing the grassland (Manning, 2006). The herd was "taken to the island in 1976 on an engineless barge tethered alongside the island boat the Mallard". Deer periodically escaped by swimming to the south bank and occupying woodland sites in North Lincolnshire (SE82; 92) (Manning, *loc. cit.*). The carcass of a drowned specimen was found in the Aire/Calder Navigation near Rawcliffe Bridge (SE6921) during the spring of 1979; the skull was salvaged and is preserved in Doncaster Museum (Acc. No. 1979.176) (Limbert, in prep.).

Despite regular culling, the deer numbers had increased to 180 by the late 1980s. After the Island's acquisition for nesting sites and saline feeding lagoons for a developing population of Avocets *Recurvirostra avoceta*, it was decided to remove the Fallow Deer. Following failed attempts at live-capture, most were culled leaving only a residual population. The reduced population of deer which numbered 14 in 2003 still caused problems by damaging the lagoon banks, trampling avocet nests and suppressing necessary scrub development (Manning, *loc. cit.*). A small number of deer still remain on the island.

Roy and Dorothy Chapman who managed the island for the Nickerson estate also looked after two Donkeys which were pets of the Nickerson family, and a white domestic Goat which featured on a photograph taken at the farm during the 1970s (Horan, *loc. cit.*).

Recent dynamic changes in the estuarine geography have greatly reduced the island and merged it with mud banks of the Lincolnshire shoreline. During very low tides, this has enabled sporadic access for terrestrial mammals including Fox *Vulpes vulpes* and Badger *Meles meles* (Peter Short pers. comm.) providing the island's first wild terrestrial carnivores.

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Internet notes:

- [1] https://en.wikipedia.org/wiki/Read%27s_Island
- [2] <http://www.bartonuponhumber.org.uk/Stories/reads.htm>
- [3] www.HumberPacketboats.co.uk/wreck.html
- [4] https://en.wikipedia.org/wiki/Airspeed_Oxford
- [5] <https://www.lincsbirdclub.co.uk/site/index.php/information/lbc-articlebloglist/61-reads-island-erstoration-project-2010>
- [6] <https://ww2.rspb.org.uk/our-work/rspb-news/news/details.aspx?id=fcm:9-222555>

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Coleoptera Report for 2010-2019

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This report deals with the Coleoptera excluding Aleocharinae and follows those which appeared in Marsh (1991, 2002 and 2010). Much field work during the period has generated many new county and vice-county records and these, along with a few other records of interest, are recorded below.

The Coleoptera records of the YNU are now held on a Recorder 6 electronic database and in this report the latest national checklist is being used for nomenclature (Duff, 2018). This replaces earlier checklists (Kloet and Hincks (1977), Duff (2008) and Duff (2012)). I have continued to use the vice-county (VC) system as a convenient means of area recording and, as is usual in this type of report, sites are listed in VC order. A Yorkshire Coleoptera checklist covering VCs 61 to 65 and based on the records on the YNU database up to December 2019 has been placed on the YNU website and may be found at <http://www.ynu.org.uk/insects/beetles>. A county atlas of Coleoptera is being undertaken and parts 1 to 10 of a proposed 13 parts are posted on the same website.

National Status is not included within the species list below. Many National Status designations are out of date and require review. This process is being undertaken by JNCC and Natural England and not all Coleoptera groups have been revised. In the following species accounts “#” indicates a new county record and “*” indicates a new vice-county record. I have adopted a convention of preceding site names with the respective vice-county and followed by OS grid reference. The initials of collector/determiner follow the date of the record. Responsibility for any errors or omissions in this report rests entirely with the author.

The following persons’ initials appear in the species list below: ABD - Tony Drane; ARG - Andy Godfrey; AP - Adam Parker; ASL - Alan Lazenby; BC - Barry Constantine; CB – Charlie Barnes; CHF – Charlie Fletcher; CJ – Colin Johnson; DB – Derek Bateson; DL - Dick Loxton; DM - David Maude; DW - Derek Whiteley; ED - Elizabeth Dickinson; EJS - Eric Smith; FEK - Frank Kenington; HW – Harry Witts; JB – J Bulman; JDC – John Coldwell; JJ – Jim Jobe; JOHS – Julian Small; KNAA - Keith Alexander; LR - Lizzy Rozday; LW - Lynn Warrington; MH – Martin Hammond; MLD - Mike Denton; MM - Mike Majerus; MT - Mark Telfer; PA – Paul Ashton; PB - Paul Buckland; PK - Peter Kendall; PS – Peter Skidmore; RA - Ralph Atherton; RAd – Robert Adams; RBA - Robert Angus;

RGB – Roger Booth; RJM - Bob Marsh; RM - Bob Merritt; RSK - Roger Key; RW - Richard Wilson; SB - Samantha Batty; SH – S. Hodges; SW - Simon Warwick; TB – Tristan Bantock; WB – William Bunting; WDH - Douglas Hincks; WRD - Bill Dolling.

CARABIDAE

Amara anthobia Villa & Villa, 1833 – (#63) HMP Lindholme (SE6805) 22/5/2007, ASL. The first (confirmed) county record since the initial unconfirmed report from Beighton Ponds (SK4483) in 1988.

Chlaenius vestitus (Paykull, 1790) – (*65) Nosterfield Reserve (SE2780) 18/7/2018, MH det. RJM, a single specimen in a pitfall trap.

Ocys tachysoides (Antoine, 1933) – (#62) Duncombe Park (SE6083) 21/6/2019, JS; (*63) Hexthorpe Ings (SE5502) 22/6/2019, RJM, a male under loose bark on fallen poplar; (63) Denaby Ings (SE4900) 28/10/19 RJM, a female in flood refuse by the River Dearne. The VC63 specimens were identified using Maddison and Anderson (2016).

HYDROCHIDAE

Hydrochus crenatus (Fabricius, 1792) – (#63) Potteric Carr (SE5800) 28/5/2002, RM. Geographically a very restricted species (mainly East Anglia) of mossy edges of fluctuating ponds and in rich fens (see Foster *et al.* 2018:78).

LEIODIDAE

Agaricophagus cephalotes Schmidt, W.L.E., 1841 – (#63) Potteric Carr (SE5900) 14/8/2002, DB det. EJS, the first county record of this rare species.

Colan viennense Herbst, 1797 – (#65) Reeth (SE0398) 29/7/2005, AG det. MLD, in riverside shingle. The first county record of this rare species.

Ptomaphagus varicornis (Rosenhauer, 1847) – (#61) Millington Wood (SE8353) 24/4/2009, WRD, one female by sweeping in Dog's Mercury *Mercurialis perennis* near the entrance to the Reserve.

STAPHYLINIDAE

Carpelimus lindrothi (Palm, 1943) – (#63) Ash Hill Farm (SE6013) 1/7/2017, RJM, a male specimen in damp ground debris at the edge of a pond. A recent immigrant also known from central England and East Anglia.

Myrmecocephalus concinnus (Erichson, 1839) – (#63) Melton Wood (SE5103) 15/9/2014, RJM, sieved from leaf litter with ants in woodland. Rare, recorded from the southern half of England and previously known as *Falagria concinna*, recorded as new to Britain in Donisthorpe (1944).

Sepedophilus lusitanicus (Hammond, 1973) – (#63) Hatfield Moor (SE7006) 14/9/2013, PB, a single specimen in a pitfall trap.

Medon apicalis (Kraatz, 1857) – the first county record was dated 2009 and was published in Marsh (2010). Since that publication I have found an earlier record for VC61, albeit unconfirmed, on the NBN Atlas ISR database and dated 1990. No recorder is noted in the NBN entry.

SCARABAEIDAE

Gnorimus variabilis (Linnaeus, 1758) – (#63) Mytholmroyd (SE0225) 30/6/2017, KNAA, several emerged from reclaimed oak beam fitted in a house, provenance of beam uncertain but may have been imported. See Alexander (2017).

CANTHARIDAE

Silis ruficollis (Fabricius, 1775) – There are now 3 sites in the county for this scarce insect with the finding of a specimen in (61) Brough (SE9426) 21/6/2019, LW det. RJM.

DERODONTIDAE

Laricobius erichsonii Rosenhauer, 1846 – (#62) Newburgh Priory (SE5675) 16/7/2003, ABD, on oak, adjacent roughly-stacked pine logs. This was new to Britain in 1971 (Hammond & Barham, 1982) and is associated with conifers where it is predatory on Homoptera.

BOSTRICHIDAE

Rhizopertha dominica (Fabricius, 1792) – (62) Beningbrough Park (SE5258) 20/8/2019, SH det. RJM. A cosmopolitan pest of stored grain products, this beetle was noted from a vane trap placed in a rot cavity in old oak, being rarely noted out-of-doors and constituting the first-known county record for 90 years. There are only five other county records.

PTINIDAE

Ptinus sexpunctatus Panzer, 1789 – (*61) Cottingham (TA0432) 16/5/2019, HW, a single specimen in a garden; (*64) Fountains Abbey (SE2768) 5/5/2016, CF, a single specimen in a light trap.

CLERIDAE

Necrobia ruficollis (Fabricius, 1775) – (61) Hollym Carrs Reserve (TA3224) 22/4/2004, FEK, a specimen in a deer skull (the first county record of this scarce species since 1950).

MELYRIDAE

Anthocomus fasciatus (Linnaeus, 1758) – (#62) Beningbrough Park (SE5158) 3/7/2019, LR det. RJM, in a vane trap on a dead oak stump. This saproxylic is widespread south of the Wash-Anglesey line.

Psilothrix viridicoerulea (Geoffroy in Fourcroy, 1785) – (#63) Crookesmoor (SK3387) 14/4/2006, EJS, in bought flowers, provenance unknown, in a house. In Britain this species is almost exclusively coastal, the larvae boring the stems of various plants.

BIPHYLLIDAE

Biphyllus lunatus (Fabricius, 1787) – (*65) High Spring Wood (SE1199) 27/4/2006, MLD.

Diplocoelus fagi (Chevrolat in Guérin-Meneville, 1837) – (#64) Studley Royal (SE2769) 8/6/2016, AG det. MLD.

MONOTOMIDAE

Rhizophagus depressus (Fabricius, 1792) – (*61) Hagg Wood (SE6852) 11/5/2002, PK.

Rhizophagus fenestralis (Linnaeus, 1758) – (#63) Lindholme (SE7006) 5/7/2019, PB, in window traps in old oaks.

Rhizophagus parallelocollis Gyllenhal, 1827 – (*61) Elstronwick (TA2332) 29/3/2006, WRD, in vegetable refuse.

CRYPTOPHAGIDAE

Atomaria puncticollis Thomson, C.G., 1868 – (#61) Eddlethorpe (SE7766) 2001, DL det. CJ, the first county record of this very scarce species.

Cryptophagus corticinus Thomson, C.G., 1863 – (#63) Thorne Moor (SE7116) 13/5/1972, WB det. PS, a single specimen under bark of burnt birch. This, the first and only county record, does not appear to have been published thus far.

Cryptophagus schmidtii Sturm, 1845 – (#62) Newburgh Priory (SE5675) 16/7/2003, ABD, on oak; (*63) Scabba Wood (SE5201) 19/9/2004, RJM, in pitfall traps in woodland ride, and in the same situation on subsequent dates. See Drane & Marsh (2006).

Henoticus serratus (Gyllenhal, 1808) – (*61) Cali Heath (SE7549) 22/4/2006, WRD.

Micrambe pilosula (Erichson, 1846) – previously known as *M. lindbergorum*, there are only eight county records – (*63) Thorne Colliery (SE7015) 10/6/2014, MT.

Telmatophilus typhae (Fallen, 1802) – (*65) Foxglove Covert (SE1697) 13/7/2002, RJM, in reed beds.

SILVANIDAE

Uleiota planatus (Linnaeus, 1760) – (#61) Cali Heath (SE7549) 14/4/2007, WRD, under bark of oak logs.

Psammoecus bipunctatus (Fabricius, 1792) – previously only known from (61) Hornsea Mere (TA1947) and (63) Askern (SE5714), discovered at (63) Hatfield Moor (SE6904) in 2005 and (63) Hexthorpe Ings (SE5502) in 2016. This updates records in Marsh (2002).

Ahasverus advena (Waltl, 1834) – (*62) Duncombe Park (SE6082) 4/10/2006, KNAA, in *Laetiporus sulphureus* on oak.

Oryzaephilus mercator (Fauvel, 1889) – (#63) Storthes Hall (SE1712) 19/8/1984, DM det. MLD; (*61) Raleigh Lodge (TA1432) 15/7/2006, WRD, a breeding population in a domestic flour bin.

PHALACRIDAE

Phalacrus caricis Sturm, 1807 – (*64) Staveley Reserve (SE3663) 27/7/2005, RJM, in water net at edge of lagoon.

Olibrus affinis (Sturm, 1807) - (#61) Hull/Marfleet railway track (TA1329) 21/5/2002, WRD, on a yellow composite; (61) Bridlington (TA1968) 30/6/2012, DW det. EJS; (61) Beacon Lagoons (TA4117) 27/6/2013, WRD, on Cat's-ear *Hypochaeris radicata*. A VC63 record from Treeton (SK4386) dated 6/9/2006, FEK remains unconfirmed for this mainly coastal insect.

KATERETIDAE

Brachypterolus vestitus (Kiesenwetter, 1850) – (#63) Scabba Wood (SE5201) 18/5/2005, RJM, swept in woodland ride; (63) Melton Brand (SE5203) 29/6/2008, RJM, shaken from Common Mallow *Malva sylvestris*.

NITIDULIDAE

Cryptarcha undata (Olivier, 1790) - (*63) Lindholme (SE7006) 11/7/2019, PB, in window traps in old oaks.

Meligethes atramentarius Forster, 1849 - (*62) Kirkdale (SE6786) 8/8/1998, WRD, on hemp nettle; only the second county record.

Meligethes bidens Brisout de Barneville, C., 1863 – (#61) Great Givendale (SE8153) 24/7/2003, WRD; (*63) Cadeby Tip (SK5199) 11/9/2016, DW det. RJM, a single male by sweeping. The foodplant is Wild Basil *Clinopodium vulgare* (see Kirk-Spriggs, 1996:78).

Meligethes lugubris Sturm, 1845 – Notable - (#61) Wharram Quarry (SE8665) 9/6/1981, RSK; (61) Wharram-le-Street (SE8666) 13/8/2002, WRD on flowers of Clustered Bellflower *Campanula glomerata*; (*63) Blackburn Meadows (SK4192) 13/8/2000, ASL.

Meligethes ruficornis (Marsham, 1802) – (#61) Spurn (TA4212) 16/8/2006, WRD, on Bittersweet *Solanum dulcamara*. Dr A.M. Easton reared adults from Black Horehound *Balota nigra* (see Kirk-Spriggs, 1996:69), but the beetle is recorded from a variety of plants.

Omosita colon (Linnaeus, 1758) – (*65) Scorton Quarry (NZ2300) 25/7/2002, RJM, in the remains of a dead crow.

Omosita discoidea (Fabricius, 1775) – (*65) Side Bank Wood (SE1199) 5/6/2006, MLD.

ENDOMYCHIDAE

Symbiotes latus Redtenbacher, 1847 – (#63) Whiteley Wood (SK3185) 1/9/1992, EJS. There are two vague and unconfirmed records of this beetle on NBN Atlas for VC63, both from SE21 and dated 1973 and 1998, in Invertebrate Site Register and YWT databases respectively.

Mycetaea subterranea (Fabricius, 1801) – (*65) Langton Bridge (SE2996) 25/7/2002, RJM, sieved from gravel near water.

Endomychus coccineus (Linnaeus, 1758) – (*65) Foxglove Covert (SE1697) 27/9/2017, ED det. RJM.

COCCINELLIDAE

Anatis ocellata (Linnaeus, 1758) – (*65) Hutton Conyers (SE3273) 9/8/2003, CF, in a garden light trap.

Chilocorus renipustulatus (Scriba, 1791) – (*65) Marfield Quarry (SE2182) 17/7/2002, RJM.

Clitostethus arcuatus (Rossi, 1794) – (63) Sprotbrough (SE5503) 11/7/2019, RJM, in a garden Malaise trap. The second county record (see also Marsh, 2010), this whitefly predator appears to be spreading northwards, maybe in response to a warming climate.

Coccinella heiroglyphica Linnaeus, 1758 – (*65) Milestone Bank (SE1583) 12/9/2000, RM det. EJS.

Cryptolaemus montrouzieri Mulsant, 1853 – (#61) – Skipsea (TA1755) 7/1991, BC det. MM. This non-established introduction was reported in Constantine & Majerus (1994) as being the first capture in the wild in Britain, and probably an escapee from a hothouse in the area, the species being used in mealybug control.

Harmonia axyridis (Pallas, 1773) – The expansion of this ladybird continues apace throughout our recording area. Since the first county record appeared in Marsh (2010:122) I can report the first vice-county records: (*61) Elstronwick (TA2332) 2/4/2008, WRD; (*62) York (SE6052) 7/8/2009, RA; (*64) Sharow (SE3271) 4/2/2007, SW; (*65) Nosterfield Reserve (SE2879) 8/6/2010, RJM.

Hypodamia variegata (Goeze, 1777) – (*65) Hutton Conyers (SE3273) 27/9/2001, CF, in a garden light trap.

Myzia oblongoguttata (Linnaeus, 1758) – (65) Upper Teesdale (NY8828) 24/5/2012, CF, beaten from Juniper. The first VC65 report since Hey's 19th century record.

Nephus redtenbacheri (Mulsant, 1846) – (*65) Bull Bogs (SD8695) 10/6/2015, RW det. RJM, in a *Sphagnum* seepage.

Rhizobius lophanthæ (Blaisdell, 1892) – (*61) Tickton (TA0641) 10/8/2017, WRD, in woodland; (61) Swine Moor (TA0541) 11/7/2019, WRD; (#63) Hatfield Moor (SE7004) 1/10/2015, AG det. MLD; (63) Sprotbrough (SE5503) 2017-2019, RJM, repeatedly in a garden Malaise trap. This Australian native was first noted from Britain in 1999 (Booth, 2000) and is establishing rapidly northwards. It feeds on scale insects.

Scymnus interruptus (Goeze, 1777) – (#63) Sprotbrough (SE5503) 19/4/2019, RJM, a single specimen in a garden Malaise trap.

Scymnus schmidtii Fursch, 1958 – (*63) Poltontoft (SE6512) 1/5/2015, RW det. MT.

Scymnus suturalis Thunberg, 1795 – (*65) Foxglove Covert (SE1697) 19/5/2001, WRD, on Gorse.

Stethorus pusillus (Herbst, 1797) – (*61) Elstronwick (TA2332) 1/5/2008 WRD. This minute ladybird (previously known as *S. punctillum* (Weise, 1891)) feeds on small aphids and spider mites.

CORYLOPHIDAE

Sericoderus brevicornis Matthews, A., 1890 – (#62) Robin Hood's Bay (NZ9505) 17/6/2006 RGB, a single female sieved from a hay bale; (*63) Fenwick Cemetery (SE5815) 5/8/2016 RJM, a male and female sieved from a churchyard compost heap. This species was only recently added to the British list in Hodge (2007) and may be separated from *S. lateralis* which is more common, widespread and probably parthenogenic by the presence of males and the form of the spermatheca (Telfer, 2012).

Sericoderus lateralis Gyllenhal, 1827) – (*65) Langton Bridge (SE2996) 25/7/2002, RJM, sieved from ground litter by the River Swale. Since the addition of *S. brevicornis* to our list (see above) some of our *lateralis* records may be referable to the new species. Any *Sericoderus* specimens should be retained and dissected.

Corylophus cassidoides (Marsham, 1802) – (*63) Hatfield Moor (SE6904) 25/8/2005, AG det. MLD.

This rarity was discussed earlier in Marsh (2002) and has been recorded as a Bronze Age subfossil from (63) Thorne Moor.

Corylophus sublaevipennis Jacquelin du Val, 1859 – until 2004 the only county record of this beetle was that from Spurn (TA4115) dated 1950, WDH. Since 2004 there have been several reports: (61) Stone Creek (TA2318) 7/9/2004, WRD, in saltmarsh; (61) Hollym Carrs reserve (TA3224) 6/11/2013, WRD, shaken from sedges.; (61) Spurn – Kilnsea Warren (TA4115) 24/9/2013, WRD, in pile of dry grass cuttings; (*62) Scarborough (TA0486) 28/5/2011, RSK, collected as part of the 2011 Bioblitz.

LATRIDIIDAE

Latridius minutus (Linnaeus, 1767) - (*61) Fitling (TA2434) 26/10/2004, WRD, in decaying *Polyporus* on Sycamore; (*64) Ripon Canal (SE3269), 16/7/2002, RJM, sieved from rotting grass mowings on towpath. Both are new vice-county records for this widespread beetle of fungoid detritus and decaying wood.

Enicmus brevicornis (Mannerheim, 1844) – (*65) High Spring Wood (SE1199) 27/4/2006, MLD. There are only seven other county records.

Enicmus rugosus (Herbst, 1793) – (#64) Avenue Wood, Temple Newsam (SE3731) 9/7/1977, PS, a record apparently not previously published.

Dienerella elongata (Curtis, 1830) – (*64) Birk Crag (SE2754) 31/5/2000 RJM, in bracket fungus on birch.

Adistemia watsoni (Wollaston, 1871) – (*62) York Museum (SE5952) 19/2/2016, AP teste RJM, found repeatedly from 2016 to 2019 in sticky traps in various Museum locations around the city. Based on the number of records from Yorkshire Museum since 2016 this insect may be more widespread and common than records suggest.

Corticaria crenulata (Gyllenhal, 1827) - (62) Coatham Sands (NZ5527) 29/7/2015, AG det. MLD, the first VC62 record for 100 years; (*63) Thorne Moor (SE7217) 20/8/2005, AG det. MLD.

Corticaria fagi Wollaston, 1854 – (#63) Holmfirth (SE1508) 26/6/1990, RBA det. CJ.

Corticaria umbilicata (Beck, 1817) – (*63) Blackmoorfoot (SE0912) 19/2/1982, MLD.

MYCETOPHAGIDAE

Litargus balteatus LeConte, 1856 – (#61) Blacktoft Sands (SE8323) 16/9/2013, MLD, in Malaise trap. This interesting record may be placed alongside those in Welch (2009) where outdoor occurrences of this mainly synanthropic stored products pest are published, the habitats including *Polyporus squamosus*, straw bales, manure heaps and grass cuttings.

Mycetophagus quadriguttatus Muller, P.W.J., 1821 – (#63) Owston Meadows SSSI (SE5511) 19/8/2003, RJM, a single by sieving ground litter under trees. This is scarce, widespread in the southern half of England and develops in fungoid habitats occurring in cavities in decaying broad-leaved timber, and in fungal decay situations in stored products and haystack bottoms.

CIIDAE

Cis punctulatus Gyllenhal, 1827 – (#65) Orgate Farm, Marske (NZ1000) 6/8/2005, MLD. A rare species of fungi on conifers, widely distributed from Scotland to south-east England.

TENEBRIONIDAE

Pseudocistela ceramboides (Linnaeus, 1758) – (#62) Beech Wood (SE5982) 5/10/2006, KNAA, reared from a larva in red-rotten wood mould in ancient hollow oak.

CERAMBYCIDAE

Pseudovadonia livida (Fabricius, 1777) – (#63) Austerfield (SK6696), 22/6/2019, SB, on flowers.

Phymatodes testaceus (Linnaeus, 1758) - (VC61) Cali Heath YWT reserve (SE7549), 8/6/2007, RJM,

in oak logs, very scarce in the county and the first VC61 record for 100 years.

MEGALOPODIDAE

Zeugophora flavicollis (Marsham, 1802) – (#63) Scout Dike (SE2304) 5/9/2018, JDC, swept from Aspen *Populus tremula*.

CHRYSOMELIDAE

Altica carinthiaca Weise, 1888 – (#63) Thorne Colliery (SE7015) 10/6/2014, MT. This has only recently been recognised as British (Cox, 2000).

Calomicrus circumfusus (Marsham, 1802) – (#62) Hutton-le-Hole (SE7089) 14/8/1993, RJM, on broom. This pre-dates the 1998 record from Denby Dale, which should now be recorded as new to VC63 and not new to the county. See Marsh (2017) for further comments on this species in Yorkshire.

ANTHRIBIDAE

Platystomos albinus (Linnaeus, 1758) – (#64) High Batts Reserve (SE3076) 18/4/2002, JB det. RAd teste JJ; (*63) Crowle Moor (SE7515) DAS det. CB. This beetle develops in fungoid wood and in *Daldinia*.

APIONIDAE

Diplapion stolidum (Germar, 1817) – (*61) Goodmanham Dale (SE9343) 1/6/2009, WRD, on Oxeye Daisy *Leucanthemum vulgare*.

Oxystoma pomonae (Fabricius, 1798) – (#63) Potteric Carr (SE5900) 2002, DB; (*61) Hull (TA0526) 12/7/2017, TB.

CURCULIONIDAE

Gymnetron rostellum (Herbst, 1795) – (#63) Wheatley (SE5905) 15/5/2008, MT. The habitat was not noted in this record but speedwell (probably Germander Speedwell *V. chamaedris*) is the accepted foodplant. Very scarce and mainly recorded in southern England.

Tychius junceus (Reich, 1797) – (#63) Thorne Colliery site (SE7015) 10/6/2014, MT.

Calosirus terminatus (Herbst, 1795) – (#61) Filey Bay (TA1281) 21/5/2005, WRD, swept from face of soft cliff overlooking Filey Bay. The foodplant is generally Wild Carrot *Daucus carota* but it is recorded from other plants.

Trichosirocalus thalhammeri (Schultze, 1906) – (#61) Stone Creek (TA2318) 7/9/2004, WRD, collected in saltmarsh. A coastal saltmarsh species usually associated with Sea Plantain *Plantago maritima* and Buck's-horn Plantain *P. coronopus*. Similar in appearance to the common *Trichosirocalus troglodytes* so may be under-recorded in suitable coastal situations (Morris, 2008).

Larinus carlinae (Olivier, 1807) – (63#) Thorpe Marsh Reserve (SE5809) 6/9/2006, AG det. MLD. This weevil is recorded south of the Wash/Anglesey line and the Thorpe Marsh capture considerably extends the range in England. Superficially it resembles *Rhinocyllus conicus* and occurs also on thistles so care needs to be taken with identification in the field.

Rhinocyllus conicus (Frolich, 1792) – (*61) North Cave Wetlands (SE8733) 20/9/2017, PA; (#63) Sprotbrough (SE5503) 23/4/2011, RJM, a single in a garden, see also Flanagan & Marsh (2011); (*65) Carthorpe (SE3083) 2/6/2019, RSK. This newcomer to the county is spreading rapidly and may be found on thistles.

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Feeding, roosting and habitat preferences of wintering Water Pipits in southern Yorkshire

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Introduction

Water Pipits *Anthus spinoletta* is a scarce passage migrant and wintering visitor to Britain and is often the highlight of a day's winter bird recording. Breeding in the high mountains of central Europe, small numbers of birds can be found in winter mostly in the lowlands of southern England associated with wetlands such as coastal fresh water marshes or brackish pools, inland marshes, rivers, sewage farms and, especially, watercress beds (Balmer *et al.* 2013, Lack 1986). Water Pipits were described as occurring in Yorkshire occasionally between October and April with a scattering of records at inland sites (Mather 1986) but increasingly small numbers (up to about 20 per annum) have been found in the county and with regularity in winter at sites such as Swillington Ings in the Aire valley and at Blacktoft Sands (YNU Bird Reports 2012-2015).

In 2012 a Water Pipit was found by Stuart Green at Low Barugh Sewage Treatment Works (STW) in the River Dearne valley of southern Yorkshire (SE3208 - VC63) on 22 January and was seen until 25 February by the finder and the author. None were then recorded until 14 January 2017 but since then Water Pipits have been regularly seen at the STW and in the surrounding area every winter to the present, with a maximum number of five. Whilst it is possible that no Water Pipits were present in the intervening years between 2013 and 2016, it is thought that they were probably present but overlooked, as later observations revealed aspects of their behaviour which helped to locate them more easily. This note reports on aspects of the wintering ecology of the population between 2017 and 2020.

Habitat

The STW serves the small villages of Darton, Barugh Green and Mapplewell to the west side of Barnsley in a semi-rural location in a stretch of the Dearne Valley with a rich variety of semi-natural habitats. The STW is not accessible to the public but a public footpath runs alongside which offers the opportunity of scanning parts of the grounds and especially the filter beds. Here, good numbers of a variety of bird species can be found feeding on the beds in winter, especially during colder weather, including Pied *Motacilla alba* and Grey *M. cinerea* Wagtails, Meadow Pipits *Anthus pratensis*, Magpies *Pica pica* and Starlings *Sturnus vulgaris*.

The floodplain of the River Dearne from Barugh Lane in the west to Smithies Bridge in the east is a 3km x 1km corridor between Barnsley town centre and the outlying villages listed above and is the wider context of the STW and its environs. It is a remarkable relict of countryside sandwiched between conurbations, and has been periodically exploited for industry, including coal mining, linen manufacture and iron making, alongside the canals, railways and roads that were needed to service them. Some habitats have been completely obliterated through colliery spoil disposal (e.g. most of the ancient woodland of Standhill Wood), yet the public ownership of much of the valley (British Coal and successors and Barnsley MBC) for many years prevented agricultural intensification and maintained an urban fringe, mostly a pastoral agriculture of cattle and horse grazing. Some of the grasslands have never been 'improved' and, combined

with a plethora of small wetlands, streams, springs, marshes, fen meadows, scrub, hedges, wet and ancient woodland fragments and the benign neglect of features such as the Barnsley Canal, Wilthorpe Marsh and 'restored' colliery spoil heaps, the result is an intimate mosaic of wildlife-rich habitats.

Habitat usage by Water Pipits

Figure 1. Dearne Valley near Barnsley looking north-east. Habitats of wintering Water Pipits:

1. Low Barugh STW. 2. Muddy pool.
3. Mine-water stream next to the pylon.
4. Roost marsh.

Photo: Garganey Trust 2012.



Figure 2. Mine-water stream, Dearne Valley, showing *Chara vulgaris* stonewort beds and dark green algal mats on ochreous muddy substrate. The plant in the foreground is Buttonweed *Cotula coronopifolia*, a naturalised neophyte and halophyte
Photo: Jeff Lunn.

During the study period, the area surrounding the STW provided a range of features supporting the wintering Water Pipits. Four areas were of particular value – the STW filter beds, a mine-water discharge stream, a muddy seepage and a marshland (used for roosting). All features can be seen in Figure 1.

Water Pipits were initially located feeding on the STW filter beds and could be observed perched on the suspending wires of the rotating arms of the jets before flying back down onto the surface of the filters searching for insects and other invertebrates, along with Meadow Pipits, Pied Wagtails, Starlings, Magpies and Grey Wagtails.

Although this was their favoured feeding area, they were also regularly observed feeding up to 100m away on a muddy stream carrying mine-water from the nearby abandoned Redbrook Colliery. Water from abandoned mines discharged by gravity or pumped out of old workings is rich in dissolved iron, which flocculates out as ochre (ferric oxide) when in contact with air, leaving stream beds coated with an orange silt. In many cases this is a severe pollution problem, having damaging effects on river and stream ecosystems such that much effort has gone into cleaning up discharges by the Coal Authority and the Environment Agency (Environment Agency 2008).

Ironically, at the wintering site the water soon becomes clear and cleaner the further from the discharge point it flows, perhaps indicating a low pollution load. Here, the stream widens out and forms a shallow rill (c.5m wide) with soft ochreous mixed mud which has begun to be colonised by surface algal mats and, surprisingly, beds of the stonewort *Chara vulgaris*, usually an indicator of clean water (Figure 2, p117). Pipits could often be seen working up and down the stream (c.50m long) and taking prey such as Tipulid (crane-fly) larvae (see Front Cover). Mine-water is also unusual in that it is warmer than surface streams, and here the mean temperature of samples taken in January 2019 was 17°C (n=5, no variation), whereas in the nearby Red Brook (another feeder to the River Dearne whose etymology probably signifies a long association with mine-water) had a mean temperature of 4°C (n=4), a significant difference which could allow more prey to be available for longer during the winter.

The third area is an unusual muddy spring in a restored pasture. This part of the valley was open-casted for coal in the 1980s and mostly restored to agriculture; however the underlying nature of many streams, drains and springs in the area has resulted in the creation of new waterbodies. At this spring, water seeps from underground forming a wide, roughly circular muddy seepage some 30m wide which then drains down northwards on a gentle slope into a marsh initially dominated by Hard Rush *Juncus inflexus*. The pasture is grazed by cattle and horses and so is very churned up and cropped very closely, so its appearance is of a heavily poached mudbath. The wetness persists for much of the year, drying up in summer and early autumn. There is also evidence of mine-water infiltration with algal mats forming on the surface. Besides being a favourite place for Water Pipits, it is also regularly used by other birds for feeding or drinking such as Linnets *Linaria cannabina*, Lapwings *Vanellus vanellus* and Stock Doves *Columba oenas*.

Lastly the roost site, which is the upper part of the more extensive Wilthorpe Marsh and consists of an area c.50m square of very wet and muddy marshland dominated by Bulrush *Typha latifolia* and Reed Sweet-grass *Glyceria maxima* (by winter this tends to die down to a thick low thatch), interspersed with patches of Grey Clubrush *Schoenoplectus tabernaemontani*, Reed Canary-grass *Phalaris arundinacea* and both Hard Rush and Soft Rush *Juncus effusus* at the edges.

Arrival and departure dates

The area is covered regularly by birders (see acknowledgements), with observations posted on the Barnsley Bird Blog. These were added to the author's records and visits recorded are given at Table 1.

Table 1. Number of visits to the wintering site with confirmed Water Pipit records (total = 101).

Year	First period (Jan-April) – no. of visits	Second period (Oct-Dec) – no. of visits
2017	3	10
2018	16	21
2019	20	13
2020	18	
TOTAL	57	44

The number of birds recorded per visit (Table 2) varied according to whether the roost site was visited. All the visits recording more than three birds were at the roost site.

Table 2. Number of Water Pipits recorded per visit 2017-2020.

No. of birds present	No. of visits
1	68
2	19
3	8
4	4
5	2
TOTAL	101

Mean arrival date was 28 October (range 24 October – 2 November, n=3).
Mean departure date was 5 April (range 31 March – 10 April, n=4).

Roosting behaviour

On 12 January 2018, Stuart Green discovered the roost site for both Water Pipits and Meadow Pipits. This enabled a much better opportunity to observe the birds and monitor the numbers. On the northern side of the roosting marsh is a telephone line. Pipits would arrive as singles or in small groups from various directions (not always from the nearby STW as may be expected) and perch on the wires. Often they would stay there for 10-15 minutes as gradually more birds arrived, and they used the time for preening, stretching and calling. One Water Pipit extracted an insect from its feathers on one occasion. Birds would then drop down into the *Glyceria* marsh in small groups as more birds arrived, until there were none left on the wires. This behaviour occurred in about forty minutes before sunset (e.g. on 23 February 2019 birds arrived at 16.40 GMT with the last Water Pipit flying down at 17.20 GMT). Water Pipits often were the last to arrive and usually positioned themselves towards the ends of the line of Meadow Pipits. Occasionally pipits would bypass the wire stage and plunge straight into the marsh. Once down they did not return to the wires, and it was usually straightforward to count the birds into the roost.

Meadow Pipits were the most abundant roosting birds, and numbers arriving at the roost considerably exceeded estimates of those feeding on the STW filter beds. Very occasionally a small number of Reed Buntings *Emberiza schoeniclus* (up to three) joined the roost. Other STW feeders fly off to roosts elsewhere, for example Pied Wagtails head off south-eastwards to roost in Barnsley town centre and Magpies to a roost to the west in Darton. Figure 3 (p120) shows the mean monthly numbers of Meadow Pipits at the roost (24 counts), illustrating a gradual increase from October to a maximum in late January-early February with a gradual fall off then

to late March. Numbers were higher in 2017/18 than the subsequent winters.

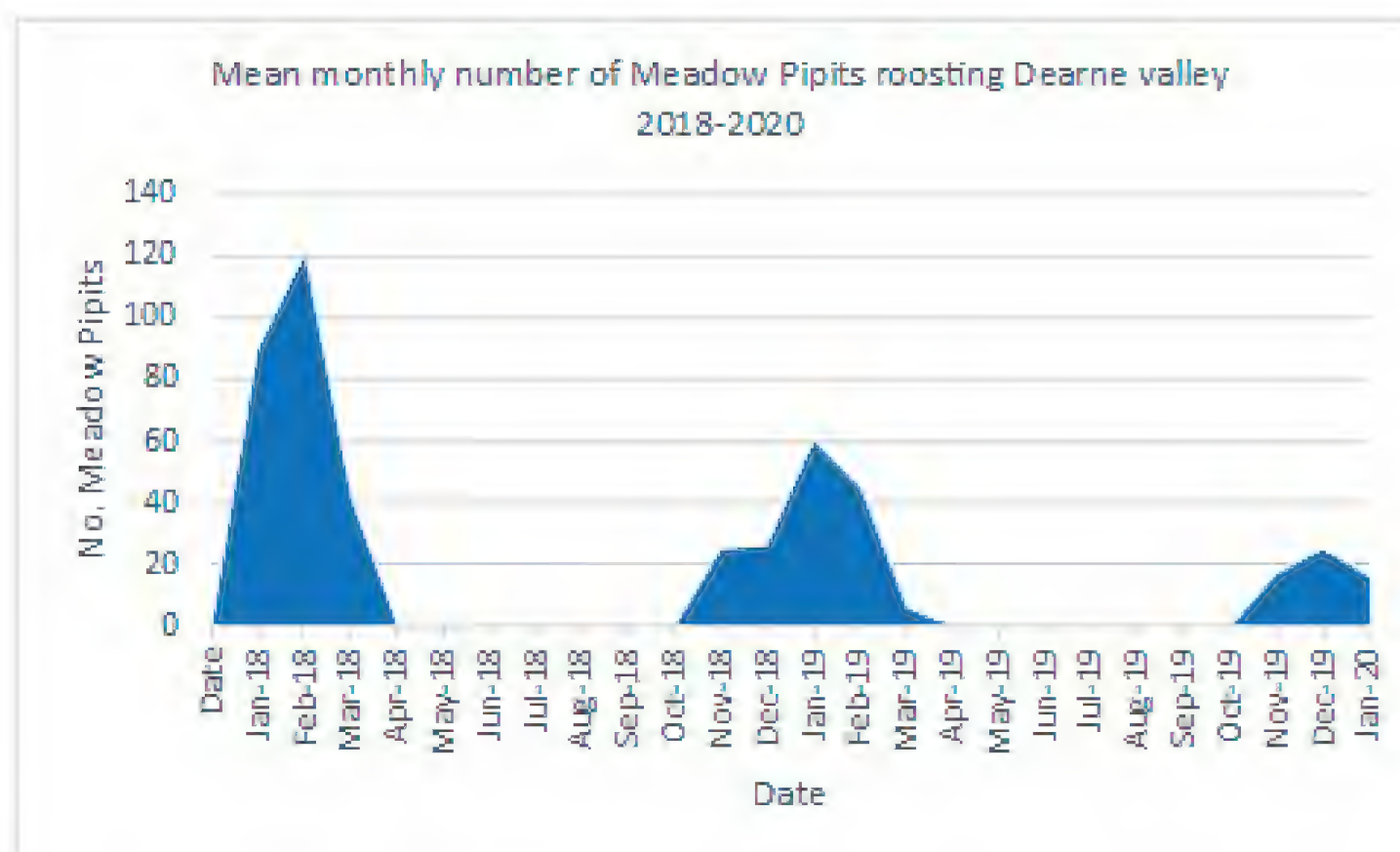


Figure 3. Numbers of Meadow Pipits at the roosting site.

Identification, jizz and plumage

Although identifiable from the accompanying Meadow Pipits by the recognised features of larger size, prominent white supercilium and larger bill, it could sometimes be quite difficult to pick birds out on the filter beds, even using scopes. Only when perched for a longer time on the wires, preferably in the company of Meadow Pipits, was identification easier.

However, the finding of the roost offered better opportunities for observation and yielded some other useful tips. Birds could be compared closely with accompanying Meadow Pipits when the larger size, more streamlined shape, greyer back, larger and longer beak, steeper forehead and longer tail with white outer tail feathers (which distinguishes it from Rock Pipit which has greyish outer tail feathers) could be seen. They were less 'dumpy' and hunched with more leg showing and the whitish-buff supercilium showed a cleaner cut face rather than the plainer face of the Meadow Pipits. However, during poor light in winter, and as the birds were in drab plumage and individuals were variable, the supercilium could still be dull and difficult to make out. Underparts were whiter, sparsely spotted and presumed adults had more contrasting coverts with strong white edges to the greater coverts and black tips and white edges to the median coverts (recalling Tree Pipit *Anthus trivialis*). The most useful feature, however, even from a distance, was the regular 'pumping' of the longer tail as the birds sat on the wires. This enabled a quick focus on any suspected Water Pipits. Some excellent photographs taken by Peter Garrity (see Front Cover) illustrate salient plumage features.

By March and early April, some birds had assumed summer plumage with the characteristic pinkish wash to the breast, and looked clean and smart. I did not record any birds calling, although they may be beyond my hearing range and difficult to pick out from the flock of Meadow Pipits.

Discussion

Water Pipits form part of a species complex along with Rock Pipits *A. petrosus* and have traditionally been regarded as a taxonomically complex group. The Scandinavian Rock Pipit *A. spinoletta littoralis*, which winters in Britain, can be difficult to distinguish from Water Pipits and the inter-relationships require further study (Snow & Perrins 1998). However, they do have strongly differing habitat preferences, with Rock Pipits favouring coastal areas and Water Pipits more inland freshwater sites, even though both are recorded inland at migration times. Water Pipits are also known to roost communally, in contrast to Rock Pipits (Lack, *op. cit.*).

The population of Water Pipits in the Dearne Valley is typical of small groups wintering in England and it is noteworthy that the different and unusual habitats such as the mine-water stream provide additional niches to the more recognised STW filter bed habitats. The overall wintering territory, taking into account the habitats used, is around 20 hectares which clearly supports a significant number of wintering passerines with a relative abundance of food available on the STW filter beds.

Roost sites are rarely described for many passerines, so it is useful to note the use of the low vegetation in freshwater marshes being used – in this case the marsh is very wet and would prove a serious obstacle for any mammalian predator, yet it provides thick low cover. Equally, the fact that both species of pipit roosted together is of interest and may help the discovery of further Water Pipit populations if Meadow Pipit roosts are found.

Summary

This local study confirms the presence of a regular population of up to five wintering Water Pipits in southern Yorkshire centred around Sewage Treatment Works' filter beds and nearby freshwater wetland habitats. Identification features, arrival and departure dates, habitat preferences and roosting behaviour as well as data on an associated population of wintering Meadow Pipits is presented.

Acknowledgements

Thanks are due to the various observers who have contributed records to the Barnsley Bird Blog - Carl Dixon, Gary Haywood, Mark Linnington, Peter Middleton but especially Stuart Green, who provided many records as well as discovering the initial bird and the roosting site. I am grateful to Peter Garrity for use of his excellent informative photograph and to the Garganey Trust for permission to use the aerial photograph.

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Yorkshire Auchenorrhyncha Part 3, Cicadomorpha – Membracoidea: Cicadellidae – Deltocephalinae (leafhoppers)

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Introduction

The Deltocephalinae is a large subfamily within the Cicadellidae. In Britain there are 114 recorded species representing 8 tribes; at present 87 of these are recorded from Yorkshire. They are all phytophagous and although some species cause leaf damage when feeding none are agricultural or horticultural pests in Britain. Overall the number of records held by the YNU is insufficient to truly represent current distribution and status.

The following list is the third of four parts which represent all currently recorded Yorkshire Auchenorrhyncha together with associated Vice Counties, statuses, hosts and years for the first and latest records. The host data are indicative only as some overwinter as adults on evergreen plants, shrubs and trees, while continental food plants may differ from British records, and some are polyphytophagous. Many species can only be identified by dissection of male specimens. Consequently, where the female cannot be reliably identified or where specimens are unavailable for examination, such records are indicative only and may not have been validated. Several historic records fall into this group.

The status convention is based on: 1 to 9 records = Rare; 10 to 24 = Scarce; 25 to 49 = Uncommon; 50 to 99 = Frequent; 100 to 199 = Common; 200 or more = Very Common.

Common names are used for host plants, with their associated scientific names only appearing at the first instance in this and subsequent parts.

The taxonomy of European Auchenorrhyncha is relatively well documented; however, there are currently no published unified keys for identification nor a comprehensive checklist of European species. There remain several differences of opinion between authors over some subfamilies and genera. The references below have been used in compiling this paper and would assist in the identification of specimens.

Infraorder: **Cicadomorpha**

Superfamily: **Membracoidea**

Family: **CICADELLIDAE** Latreille, 1817

Subfamily: DELTOCEPHALINAE Fieber, 1869

Tribe: ATHYSANINI

Allygidius commutatus (Fieber, 1872)

VC63: rare, nymphs on grasses, 1982, single record.

Allygus communis (Ferrari, 1882)

VC63: rare, adults on oak and birch, nymphs on grasses, 1993-2016, 2 locations but identification to be verified.

Allygus mixtus (Fabricius, 1794)

VC61, VC62, VC63, VC64, VC65: frequent, nymphs on grasses, 1922-2016.

Allygus modestus Scott, 1876

VC61, VC62, VC63, VC64: uncommon, nymphs on grasses, 1960-2018.

- Athysanus argentarius*** Metcalf, 1955
VC61, VC63: scarce, grasses in damp areas, 2012-2018.
- Cicadula aurantipes*** (Edwards, 1894)
VC61, VC62, VC63, VC64: uncommon (often misidentified – see *C. persimilis* and *C. quinquenotatus*), rushes, 1953-2017.
- Cicadula frontalis*** (Herrich-Schaeffer, 1835)
VC61, VC62, VC63, VC64: scarce, rushes, 1963-2007.
- Cicadula intermedia*** (Boheman, 1845)
VC62, VC63, VC64, VC65: rare, rushes, 1956-2000.
- Cicadula ornata*** (Melichar, 1900)
VC61: rare, rushes, 1987, single record.
- Cicadula persimilis*** (Edwards, 1920)
VC61, VC62, VC63, VC64, VC65: uncommon, Cocksfoot grass, 1937-2017.
- Cicadula quadrinotata*** (Fabricius, 1794)
VC61, VC62, VC63, VC64, VC65: frequent, rushes, 1935-2017.
- Cicadula quinquenotata*** (Boheman, 1845)
VC62, VC63, VC64: scarce, rushes and reeds, 1935-2013.
- Cicadula saturata*** (Edwards, 1915)
VC62, VC63, VC64: rare, rushes, 1963-1984.
- Colladonus torneellus*** (Zetterstedt, 1828)
VC62, VC63: rare, woodland shrubs, 1931-1993, 3 records.
- Conosanus obsoletus*** (Kirschbaum, 1858)
VC61, VC62, VC63, VC64, VC65: frequent, grasses, 1922-2017.
- Elymana sulphurella*** (Zetterstedt, 1828)
VC61, VC62, VC63, VC64, VC65: common, grasses, 1922-2018.
- Euscelidius variegatus*** (Kirschbaum, 1858)
VC61, VC63: rare, grasses, 1990-2016.
- Euscelis incisus*** (Kirschbaum, 1858)
VC61, VC62, VC63, VC64, VC65: common, grasses, 1922-2018.
- Euscelis lineolatus*** Brullé, 1832
VC61, VC62, VC63, VC64: uncommon, grasses, 1928-2016.
- Euscelis ohausi*** Wagner, 1939
VC63: rare, Broom, 1986-1992.
- Graphocraerus ventralis*** (Fallén, 1806)
VC61, VC63, VC64: uncommon, grasses, 1959-2018.
- Hardya melanopsis*** (Hardy, 1850)
VC61, VC62, VC63, VC64: scarce, grasses, 1935-2014.
- Idiodonus cruentatus*** (Panzer, 1799)
VC61, VC62, VC63, VC64: rare, damp heaths, 1935-1984.
- Lamprotettix nitidulus*** (Fabricius, 1787) (see Figure 1, p124).
VC61, VC62, VC63, VC64: scarce, grasses and woodland shrubs, 1935-2017.
- Limotettix striola*** (Fallén, 1806)
VC61, VC62, VC63, VC64: scarce, sedges and rushes, 1958-2018.
- Macustus grisescens*** (Zetterstedt, 1828)
VC61, VC62, VC63, VC64: frequent, grasses and rushes, 1922-2018.
- Mocydia crocea*** (Herrich-Schaeffer, 1836)
VC61, VC62, VC63, VC64: common, grasses, 1935-2018.
- Mocydiopsis attenuata*** (Germar, 1821)
VC61, VC63: rare, fescues, 2002-2017.



Figure 1.
Left: The scarce *Lamprotettix nitidulus* (Fabricius, 1787) found at Hollicars, Escrick in August 2016 on rhododendron (see p123).



Right: The rare *Paralimnus phragmitis* (Boheman, 1847) found at Thorne Moor in August 2017 by sweeping *Phragmitis australis* (see p126).

Mocydiopsis parvicauda Ribaut, 1939

VC63: rare, Common Bent Grass *Agrostis capillaris*, 1986-2016.

Ophiola corniculus (Marshall, 1866)

VC62, VC63: scarce, Common Heather and Cranberry *Vaccinium oxycoccos*, 1964-2017.

Ophiola decumana (Kontkanen, 1949)

VC63: rare, Knotweed *Polygonum aviculare* and Sheep's Sorrel *Rumex acetosa*, 2014, single record.

Ophiola russeola (Fallén, 1826)

VC63: rare, Common Heather and Cranberry, 1976-1984, 2 records.

Paluda flaveola (Boheman, 1845)

VC63, VC64: scarce, grasses and rushes, 1976-2014.

Rhopalopyx adumbrata (C. Sahlberg, 1842)

VC61, VC62, VC63, VC64: scarce, Sheeps Fescue *Festuca ovina* agg. and Red Fescue *Festuca rubra*, 1935-2018.

Rhytistylus proceps (Kirschbaum, 1868)

VC61, VC62, VC63: rare, Sheeps Fescue, 1984-2006.

Sardius argus (Marshall, 1866)

VC63: rare, grasses, 1984-2005, 3 records.

Speudotettix subfuscus (Fallén, 1806)

VC61, VC62, VC63, VC64, VC65: common, oaks and other deciduous trees, 1923-2016.

Streptanus aemulans (Kirschbaum, 1868)

VC61, VC62, VC63, VC64, VC65: scarce, grasses, 1923-2017.

Streptanus marginatus (Kirschbaum, 1858)
VC61, VC62, VC63, VC64, VC65: scarce, Wavy Hair Grass *Deschampsia flexuosa*, 1925-2004.

Streptanus okaensis Zachvatkin, 1948
VC63: rare, Purple Small-reed *Calamagrostis canescens*, 1990-2015.

Streptanus sordidus (Zetterstedt, 1828)
VC61, VC62, VC63, VC64, VC65: uncommon, grasses, 1922-2017.

Thamnotettix confinis (Zetterstedt, 1828)
VC61, VC62, VC63, VC64, VC65: frequent, deciduous trees, 1922-2016.

Thamnotettix dilutior (Kirschbaum, 1868)
VC61, VC62, VC63: rare, oaks, 1922-2018.

Tribe: DELTOCEPHALINI

Deltocephalus pulicaris (Fallén, 1806)
VC61, VC62, VC63, VC64, VC65: frequent, short grasses, 1922-2017.

Recilia coronifera (Marshall, 1866)
VC63: rare, short grasses, 1989, single record.

Tribe: DORATURINI

Doratura stylata (Boheman, 1847)
VC61, VC62, VC63, VC64: uncommon, grasses, 1925-2017.

Tribe: FIEBERELLINI

Fieberiella septentrionalis Wagner, 1963
VC63: rare, Grey Willow *Salix cinerea*, 2010-2017.

Tribe: GRYPOTINI

Grypotes puncticollis (Herrich-Schaeffer, 1834)
VC61, VC63, VC64: uncommon, Scots Pine *Pinus sylvestris*, 1968-2015.

Tribe: MACROSTELINI

Balclutha punctata (Fabricius, 1775)
VC61, VC62, VC63, VC64: common, grasses, 1982-2018.

Macrosteles cristatus (Ribaut, 1927)
VC63: scarce, grasses, 1979-2016.

Macrosteles fieberi (Edwards, 1899)
VC63, VC64: rare, Cottongrass, 1922-1974, 3 records.

Macrosteles frontalis (Scott, 1875)
VC62, VC63, VC64: rare, Common Reed *Phragmites australis* and Field Horsetail *Equisetum arvense*, 1934-2005.

Macrosteles horvathi (Wagner, 1935)
VC61, VC62, VC63, VC64, VC65: scarce, rushes, 1923-2016.

Macrosteles laevis (Ribaut, 1927)
VC61, VC62, VC63, VC64: uncommon, dry grasses, 1975-2017.

Macrosteles ossiannilssoni Lindberg, 1954
VC61, VC62, VC63, VC64: uncommon, rushes, 1978-2016.

Macrosteles quadripunctulatus (Kirschbaum, 1868)
VC63: rare, grasses on sand dunes, 2005-2015.

Macrosteles septemnotatus (Fallén, 1806)
VC61, VC62, VC63, VC64, VC65: scarce, Meadowsweet *Filipendula ulmaria*, 1923-2018.

Macrosteles sexnotatus (Fallén, 1806)

VC61, VC62, VC63, VC64, VC65: common, grasses, 1922-2017.

Macrosteles sordidipennis (Stål, 1858)

VC61, VC63: rare, Weeping Alkaligrass *Puccinellia distans*, 1986-2005, 3 records.

Macrosteles variatus (Fallén, 1806)

VC61, VC62, VC63, VC64: rare, Nettle in woodland, 1922-2007.

Macrosteles viridigriseus (Edwards, 1924)

VC61, VC62, VC63, VC64, VC65: frequent, grasses in marshy areas, 1955-2018.

Sonronius dahlbomi (Zetterstedt, 1840)

VC61, VC62, VC63, VC64: scarce, Rosebay Willowherb *Chamerion angustifolium*, 1924-1989.

Tribe: OPSIINI

Opsius stactogalus Fieber, 1866

VC61, VC63: rare, Tamarisk *Tamarix ramosissima*, 1997-2017, 3 records.

Tribe: PARALIMNINI

Adarrus multinotatus (Boheman, 1847)

VC61, VC62, VC63: rare, Tor-grass *Brachypodium pinnatum*, 1976-2006.

Arocephalus punctum (Flor, 1861)

VC61, VC62, VC63, VC64, VC65: scarce, grasses, 1925-2013.

Arthaldeus pascuellus (Fallén, 1826)

VC61, VC62, VC63, VC64, VC65: common, grasses, 1922-2018.

Arthaldeus striifrons (Kirschbaum, 1868)

VC61: rare, dune grasses, 2005, single record.

Cosmotettix caudatus (Flor, 1861)

VC63: rare, Hairy Sedge *Carex hirta*, 2001, single record.

Cosmotettix panzeri (Flor, 1861)

VC62: rare, Cottongrass, 1992, single record.

Errastunus ocellaris (Fallén, 1806)

VC61, VC62, VC63, VC64, VC65: common, grasses, 1922-2017.

Erzaleus metrius (Flor, 1861)

VC61, VC63, VC64: scarce, Reed Canary Grass *Phalaris arundinacea*, 1954-2015.

Jassargus distinguendus (Flor, 1861)

VC61, VC62, VC63, VC64, VC65: uncommon, grasses, 1922-2001.

Jassargus flori (Fieber, 1868)

VC62, VC63, VC64: scarce, grasses, 1923-2013.

Jassargus pseudocellaris (Flor, 1861)

VC63: rare, grasses, 1969-2014.

Jassargus sursumflexus (Then, 1901)

VC61, VC62, VC63: rare, Purple Moor-grass *Molinia caerulea*, 1965-1999.

Paralimnus phragmitis (Boheman, 1847) (see Figure 1, p124).

VC63: rare, Common Reed, 1990-2017.

Paramesus obtusifrons (Stål, 1853)

VC61, VC63: scarce, Sea Clubrush *Bolboschoenus maritimus*, 1975-2016.

Psammotettix albomarginata Wagner, 1941

VC63: rare, Brown Bent Grass *Agrostis vinealis* and Grey Hair-Grass *Corynephorus canescens*, 1986, single record.

Psammotettix cephalotes (Herrich-Schaeffer, 1843)
VC61, VC62, VC63, VC64: scarce, Quaking Grass *Brezia media*, 1926-2016.

Psammotettix confinis (Dahlbom, 1850)
VC61, VC62, VC63, VC64: frequent, grasses, 1923-2018.

Psammotettix nodosus (Ribaut, 1925)
VC61, VC62, VC63, VC64, VC65: uncommon, grasses, 1927-2013.

Psammotettix putoni (Then, 1898)
VC61: rare, Sea Poa Grass *Puccinella maritima*, 1975-2015.

Psammotettix sabulicola (Curtis, 1837)
VC61: rare, Marram Grass *Amophila arenaria*, 1989-2003, 3 records.

Sorhoanus xanthoneurus (Fieber, 1869)
VC62, VC63, VC64: rare, Hare's-tail Cottongrass *Eriophorum vaginatum*, 1956-1990.

Turrutus socialis (Flor, 1861)
VC61, VC62, VC63, VC64: scarce, calcareous grasses, 1965-2006.

Verdanus abdominalis (Fabricius, 1803)
VC61, VC62, VC63, VC64, VC65: frequent, grasses, 1922-2005.

Taxonomic Changes since Le Quesne & Payne (1981) and adopted herein:

ATHYSANINI

Allygus commutatus Fieber, 1872 is now *Allygidius commutatus* (Fieber, 1872).
Allygus communis (Ferrari, 1882) is new to Britain.
Cicadula ornata (Melichar, 1900) is new to Britain.
Scleroracus corniculus (Marshall, 1866) is now *Ophiola corniculus* (Marshall, 1866).
Scleroracus decumana (Kontkanen, 1949) is now *Ophiola decumana* (Kontkanen, 1949).
Scleroracus plutonius (Uhler, 1877) is now *Ophiola russeola* (Fallén, 1826).
Paluda adumbrata (C. Sahlberg, 1842) is now *Rhopalopyx adumbrata* (C. Sahlberg, 1842).
Streptanus okaensis Zachvatkin, 1948 is new to Britain.

FIEBERELLINI

Fieberiella septentrionalis Wagner, 1963 is new to Britain.

PARALIMNINI

Adarrus ocellaris (Fallén, 1806) is now *Errastunus ocellaris* (Fallén, 1806).
Diplocolenus abdominalis (Fabricius, 1803) is now *Verdanus abdominalis* (Fabricius, 1803).
Diplocolenus Verdanus bensoni (China, 1933) is now *Verdanus bensoni* (China, 1933).
Mocuellus metrius (Flor, 1861) is now *Erzaleus metrius* (Flor, 1861).
Jassargus pseudocellaris (Flor, 1861) is new to Britain.

Reference

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A list of some British species and selected photographs can be viewed at:
<https://www.britishbugs.org.uk/gallery.html>

Recorder's report for the aculeate Hymenoptera 2016 - 2019

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Six new species have been recorded in Watsonian Yorkshire between 2016 and 2019. Two are recently recognised as new species to the UK and four species indicate a northward extension of their range in England. The former are the Ruby-tailed wasp *Chrysis corusca* Valkeila and the ant, *Lasius neglectus* Van Loon *et al.*. *C. corusca* was recorded by A. Millard at Three Hagges Wood, Escrick during 2016. At present this species has only been recorded from Berkshire, Surrey, Rutland and now North Yorkshire. *L. neglectus* was recorded by P. Buckham-Bennett at Kirk Smeaton during 2016. Unfortunately this species looks very similar to *L. niger* (Linnaeus) and occurs in similar habitats.

The other four species are the solitary wasp, *Gorytes laticinctus* (Lepelletier), the Ivy bee *Colletes hederæ* Schmidt & Westrich, the leaf-cutting bee *Megachile leachella* Curtis and the Hawk's-beard Mining bee *Andrena fulvago* (Christ). *G. laticinctus* was recorded at Acomb, York by J. Small during 2017 and at Potteric Carr by P. Whelpdale during 2019. *C. hederæ* was recorded at Flamborough by A. Gomez and at Saltburn-by-Sea by E. Lamborn during 2016. This species is dependent on the pollen from Ivy which flowers in the autumn. *M. leachella* was recorded from Spurn by P. Whelpdale during 2019. This subterranean nesting species is mainly found on coastal sand dunes. *A. fulvago* was recorded by A. Millard in 2017 at Three Hagges Wood and in 2019 at Brodsworth Hall.

Other notable species recorded were *Tiphia femorata* Fabricius at Austerfield Sand Pit (D. Whiteley, 2016) and New Park Spring, near Grimethorpe (J.D. Colwell, 2018); *Agenioideus cinctellus* at Fence, Aston (P. Leonard, 2017); *Cerceris rybyensis* (Linnaeus) from Austerfield Sand Pit (G. Boyd, 2016), Wadsley Common (A. Small, 2016), North Ferriby (I. Andrews, 2017) and Woolley Quarry (J.D. Coldwell, 2018); *Andrena nitida* (Müller), from Hemplands Allotments, York (M.E. Archer, 2016); *A. thoracica* (Fabricius) from Boggle Hole and Robin Hood's Bay (T. Manley, 2017) and *Melitta leporina* (Panzer) from Austerfield Sand Pit (G. Boyd, 2016).

This is my 13th and last report as a YNU Recorder. My first report was Archer (1986) so that my reports cover 32 years (1986-2019), although Archer (1986) also considered the years from 1979. My contributions to the study of Yorkshire Aculeates has been the collection of field records by myself and others, including detailed studies of 38 field sites, visits to Natural History Museums (Doncaster, Keighley, Leeds, Manchester, Rotherham, Scarborough, Sheffield and York), access to the personal collections of T. Broadhead, J.H. Flint, D.H. Smith and W.D. Fordham (via the Fordham Cards since his collection at Hull Museum was destroyed during the 1939-1945 war) and correspondence with G.M. Spooner. I have scanned the literature including *The Naturalist*, volume one of the *Yorkshire Victoria County History* and nine entomological journals. I have set up an electronic database (Excel) so that all these records are readily available. The database contains 36,383 records in three files: Debs (Dryinidae, Embolemidae & Bethylidae): 797 records; Wasps and Ants: 12,331 records; Bees: 23,255 records.

The database also records three vagrant species: *Eumenes papillarius* (Christ) (not a British species, 1989, 1999), *Polistes dominula* (Christ) (not a British species, recorded in 2004, associated with Spanish vegetables) and *Eucera longicornis* (Linnaeus) (1850, well north of its English range) and two ant species associated with heated buildings: *Hypoponera punctatissima* (Roger) (three records, last recorded 1995) and *Monomorium pharaonis* (Linnaeus) (nine records, last recorded 1979).

Table 1. Latest decade when numbers of individual species from the families and sub-families listed were recorded. All species recorded since 2000 have been grouped together.

Family/ sub-family	Since 2000	1990s	80s	70s	60s	50s	40s	30s	20s	10s	00s
Dryinidae	12	7	4								
Embolemidae	0	1									
Bethylidae	1	2	1								
Chrysididae	14	1	1				1				
Tiphiidae	3										
Mutillidae	1	1									
Sapygidae	1	1									
Pompilidae	21	3				1					
Eumeninae	9			1		1		1			
Sphecidae	1			1							
Crabronidae	72	4		1		1					1
Colletinae	11										
Andreninae	31	2	1	1		1	1		1		
Halicttinae	27		1		1	1		1			1
Melittinae	1										

Megachilinae	16						1				
Solitary Apinae	20	1									
Vespinae	8	1									
Formicidae	14	2						2	1		
Social Apinae	19		1	2	1	2		1			
Total	282	26	9	6	2	7	3	5	2		2

Only recorded prior to 1900: *Cleptes nitidulus* (1850) and *Ectemnius lituratus* (1852).

Table 1 shows the latest decade when a species was recorded except for species recorded since 2000, which have been grouped together. The total number of species recorded was 346 with 282 (81.5%) species recorded since 2000 and 64 (18.5%) only before 2000. What are the possible reasons why 64 have not been recorded since 2000? This problem can be examined under the following two headings:

1. Extinction or probable extinction of species.
2. Those remaining species that can be divided into few or common ones.

According to Archer (2014) 29 species were considered extinct or probably extinct. Subsequent changes to this list are as follows: *Ancistrocerus nigerrimus* should be *A. nigricornis*; two species recorded since 2014 can be removed: *Andrena thoracica* Fabricius (2017) and *Melitta leporina* (Panzer) (2016) and four species (given with the year of their latest record) can be added: *Pemphredon austriaca* (Kohl) (1903), *Andrena falsifica* Perkins (1924), *Coelioxys quadridentata* (Linnaeus) (1942) and *Lasioglossum pauxillum* (Schenck).(1987) Thus 31 species can be considered extinct or probably extinct.

The remaining 33 species not recorded since 2000 can be divided into two groups, depending on whether they have many or few records before this date. Table 2 shows the former, with ten species not recorded at all since 2000 (column 1) and Table 3 shows the latter with 23 species not recorded since 2000 (column 1). It is understandable that species with few records prior to 2000 should have no records since but less clear why species with many records prior to 2000 should have none since.

Table 2. Species with many records prior to 2000 but either no records or just one since.

No records since 2000	One record since 2000
<i>Anteon arcuatum</i> Kieffer	<i>Aphelopus serratus</i> Richards
<i>A.brachycerum</i> (Dalman)	<i>Anteon flavicorne</i> (Dalman)
<i>A. jurineanum</i> Latreille	<i>A. fulviventre</i> (Haliday)
<i>Bethylus cephalotes</i> Förster	<i>A. infectum</i> (Haliday)
<i>Mutilla europaea</i> Linnaeus	<i>Bethylus fuscicornis</i> (Jurine)
<i>Priocnemis fennica</i> Haupt	<i>Elampus panzeri</i> (Fabricius)
<i>Dryudella pinguis</i> (Dahlbom)	<i>Methocha articulata</i> Latreille
<i>Ectemnius lapidarius</i> (Panzer)	<i>Arachnospila trivialis</i> (Dahlbom)
<i>Myrmica lobicornis</i> Nylander	<i>Psenulus concolor</i> (Dahlbom)
<i>Leptothorax acervorum</i> (Fabricius)	<i>Passaloecus insignis</i> (Van der Linden)
	<i>P. monilicornis</i> Dahlbom
	<i>Bombus muscorum</i> (Linnaeus)

Table 3. Species with few records prior to 2000 but either no records or just one since.

No records since 2000	One record since 2000
<i>Aphelopus quercus</i> Olmi	<i>Chrysura radians</i> Harris
<i>Anteon exiguus</i> (Haupt)	<i>Chrysis vanlithi</i> Linsenmaier
<i>A.tripartitum</i> Kieffer	<i>Priocnemis cordivalvata</i> Haupt
<i>Gonatopus bicolor</i> (Haliday)	<i>P. gracilis</i> Haupt
<i>Gonatropus clavipes</i> (Thunberg)	<i>Crossocerus palmipes</i> (Linnaeus)
<i>G. distinctus</i> Kieffer	<i>C. walkeri</i> (Shuckard)
<i>G. lunatus</i> Klug	<i>Nysson dimidiatus</i> Jurine
<i>G. distinguendus</i> Kieffer	<i>Lasioglossum latriventre</i> (Schenck)
<i>Embolemus ruddii</i> (Westwood)	<i>Melitta leporina</i> (Panzer)
<i>Bethylus dendrophilus</i> Richards	<i>Nomada flavopicta</i> (Kirby)
<i>Cephalonomia formiciformis</i> Westwood	<i>Myrmica sulcinodis</i> Nylander
<i>Omalus aeneus</i> (Fabricius)	
<i>Hedychridium cupreum</i> (Dahlbom)	
<i>Monosapyga clavicorns</i> (Linnaeus)	
<i>Priocnemis hyalinatus</i> (Fabricius)	
<i>Caliadurgus fasciatellus</i> (Spinola)	
<i>Crossocerus styrius</i> (Kohl)	
<i>Spilomena beata</i> Blüthgen	
<i>Andrena coitana</i> (Kirby)	
<i>A.labialis</i> (Kirby)	
<i>A.similis</i> Smith	
<i>Nomada obtusifrons</i> Nylander	
<i>Vespula austriaca</i> (Panzer)	

To investigate this observation further, species with only one record since 2000 were divided into two groups depending upon whether they had few or many records before 2000. These comprise twelve species with many records before 2000 (Table 2, column 2, p131) and eleven species with few records before this date (Table 3, column 2, p130). The outcome is similar to the comparison of species recorded only before 2000.

Two suggestions can be given for those species either not recorded at all since 2000 or recorded only once. They are either in the process of heading for extinction or the species have been poorly recorded. The Deb species (*Aphelopus*, *Anteon*, *Gonatropus*, *Embolemus*, *Cephalonomia*, and *Bethylus*) have been poorly recorded since 2000 because the major recorder of Debs, J. Burn, ceased to record after 2000. The remaining 13 species (Table 2, p130, 22 minus Deb species) could be the next group of species to become extinct in the near future. This potential loss of species can be contrasted with the 21 new species (with *Andrena fulvago*) recorded since 2000 (including this publication, together with Archer, 2004, 2007, 2010, 2012 and 2015).

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Errata

In the previous edition of *The Naturalist* (No.1103) the Editorial Board takes full responsibility for the following errors:

In Warrington, B. P. (2020) Leaf-mining flies (Agromyzidae) new to the Yorkshire Diptera list: Part 2. pp 56-57 *Phytoliriomyza perpusilla* (Meigen, 1830) was added to the list in error and should be removed from the Yorkshire Diptera list.

In Erratum (p19) Richard Shelby should read Richard Selby.

The Life of William Prest, York Entomologist (1824-1884)

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William Prest was one of the most influential Nineteenth Century entomologists from the York area. He was a skilled and energetic collector of Lepidoptera and an enthusiastic communicator and compiler of natural history information. At different times in his life he organized two local natural history societies from his own home: the York Entomological Society (YES) and the York and District Field Naturalists' Society (YDFNS), the latter lasting over a hundred years. He represented the York district within the Yorkshire Naturalists' Union (YNU), proposed its current name and was first president of its Entomological Section. He obtained many new county records of Lepidoptera and was involved in the discovery of new varieties. He collaborated with George Porritt in compiling the first list of Yorkshire Lepidoptera. Evidence suggests that he was very literate, artistic, generous, gregarious, a fast learner, a talented organizer and a much-liked and admired man. Remarkably, for all this, there has been little attempt to compile the existing information about his life. Below I report what I have been able to glean from a short time researching William Prest and his work. I hope it may serve to stimulate others to solve some of the remaining mysteries about this remarkable man. I have attempted to interpret around known facts, so that it is more than just a dry list of dates. To indicate what is factual, I have referenced sources fully. I use current vernacular names of most of the species mentioned below, as the scientific names have mostly changed since Prest's day and, where scientific names are used, they are the modern ones.

Birth to marriage, 1824-1852

William grew up in an ever-increasing family in York city centre with all the boys, like their father, becoming skilled manual tradesmen. William became an apprentice painter and decorator and eventually “graduated” as a freeman of the city, setting up his own decorating business and marrying the daughter of his landlady.

William Prest was born on 7 May 1824¹ and baptized two days later¹ at St Sampson’s Anglican church, next to Newgate market. His father, William senior, probably born c. 1803 in Warrington², was a tinner¹ and later a gas fitter², and had come from very lowly beginnings³ but achieved freemanship of York through servitude in 1820⁴, which allowed him to escape the deep poverty of his youth. In 1818, at the extremely young (but then legal) age of c. 15, he married Mary Bullock (b. Lincoln, c. 1805²) at St Sampson’s⁵. At the time of William’s birth the couple were living in Jubbergate¹ but before that lived in nearby Silver Street⁶.

Sadly, but not unusually for this time, William senior and Mary’s first two children died young: Jane in 1822 aged 3⁷ and Thomas in 1824 aged 2⁸. William, the third to be born, was the first of a large ever-growing family to survive childhood; next came George (b. 1826⁹, later a whitesmith¹⁰), then Robert (b. c.1830¹¹, later an engineer¹²), Ellen (b. 1834¹³), Elizabeth (b. 1836¹⁴), Thomas (b. 1842¹⁵, later a gas-fitter¹⁶) and James (b. 1845 later a stonemason¹⁷). The Prest family moved residence frequently, no doubt as their needs and resources changed, though they remained in York city centre^{2, 9, 11, 13, 14}.

William Prest (William junior) became a painter and decorator, thus following his father, as did his brothers, as a skilled manual tradesman. We do not know much about the circumstances of this choice but he expressed a talent and proclivity for art throughout his later life that was likely an important factor. Aged 17 he was apprentice to painter Ferdinando Brown in Davygate, along with three other apprentices¹⁸. In 1847, aged 23, he achieved freemanship of the city by birthright¹⁹ and, by 27, he had his own business employing a man and two boys and was lodging at 2 Tower Place, the house of widow Jane Seagar²⁰. Jane was an upholstress²⁰, whose husband Thomas, a glass blower²¹, had died in 1844 of dropsy (oedema)²². She lived with her daughter Phoebe Anne²⁰. One thing must have led to another, for on 26 June 1852, William married Phoebe at St Mary’s, Castlegate²¹. He was 28 and she 21.

An alliance between the Seagars and Prest would have been mutually beneficial. Jane and Phoebe had lost the financial support of the late Thomas but lived in a comfortable riverside property. Prest’s business could provide for both women as well as any offspring, whilst he could profit from Jane’s support with home and later their family. In the initial years Prest is likely to have received some financial assistance from his future mother-in-law. Starting out as a lodger, Prest became very integrated within the Seagar family, which remained a close one until his death. The Prest family grave, adjacent to the Seagar plot, had been paid for by Jane in 1849²³, three years before William and Phoebe married, and since the marriage took place when Phoebe was 21, it seems probable that marriage was delayed until she had come of age.

Children, work and the York Entomological Society, 1853 -1873

Between 1853 and 1873 William and Phoebe raised three daughters and two sons, although one of their daughters did not survive childhood. They moved house at least three times. William developed his painting and decorating business. He also developed an interest in entomology, starting a collection of Lepidoptera, which rapidly grew. He published several articles about his collecting excursions around the York district. He became an active member of the YES, whose

meetings he hosted for some years at his home, but which eventually folded in the late 1860s.

After marrying, William and Phoebe moved to 16 Coppergate²⁴ where they had their first child, Mary Jane, born on 19 April 1853²⁵, baptized at All Saint's Pavement on 11 May²⁵. William worked out of several premises at Church Lane, High Ousegate and Coppergate²⁶, and had on show "a choice assortment of chimney glasses, window cornices, brackets, pictures, picture frames". He would also clean, frame and restore pictures²⁶, all in addition to the standard painting and wallpapering services we nowadays associate with the profession. A second daughter, Laura Ann, was born in 1855²⁷ and baptized at St Mary's Castlegate²⁸. By then the family had moved around the corner into Castlegate itself²⁸.

William's interest in entomology appears to have begun during these young family years. Just after the birth of his first son, Charles Seagar Prest²⁹, he first appeared in an entomological journal in October 1857, age 33, with a mention in the monthly meeting report of the YES (Anderson, 1857a), then newly formed (Anderson, 1857b), at which he exhibited some Red Admiral butterfly specimens. The YES held "show and tell" meetings, promoted exchange of specimens and information and ran a lending library for members (see Anderson, 1857b). Prest appears to have been amongst the original members but was obviously then inexperienced and he was probably encouraged to join by a more experienced acquaintance. The day after this first entomological mention, baby Charles was baptized at St Mary Castlegate³⁰.

Two weeks later William was again in print, offering specimens for exchange (Prest, 1857): Brimstone, Marbled White, Small Pearl-bordered Fritillary, Pearl-bordered Fritillary, Marsh Fritillary, Grizzled Skipper and Narrow-bordered Five-spot Burnet in return for Wood White, Mountain Ringlet, Large Heath, White Admiral, Painted Lady, Heath Fritillary, Duke of Burgundy, Holly Blue, Small Blue, Chalkhill Blue, Northern Brown Argus, Chequered Skipper and Lulworth Skipper. This list is revealing of what was and was not available to a York entomologist of the day and thought valuable. The idea of York district populations of Small Pearl-bordered Fritillary, Pearl-bordered Fritillary, Marsh Fritillary and Grizzled Skipper would seem fantastic today were it not for other contemporary records of their presence (see Frost, 2005). Yet it is strange that he had no Holly Blue or Painted Lady, both known from the York area at the time (Morris, 1853). The species listed are all butterflies and not moths, which dominated his later findings, as is common amongst 'newbie' lepidopterists today. In addition, he requested that "applicants had better send boxes as I am only a young collector and have not got many yet." The return address given is 7 Castlegate, an address that was about to become well known to York entomologists.

There was at that time a serious split within the YES. Early meetings had taken place at The Bay Horse Inn, 25 Gillygate, the premises of then YES Treasurer, Robert Hind. For the 20 March 1858 edition of the *Entomologist's Weekly Intelligencer*, the editor Henry Tibbats Stainton received reports of not one but two March meetings of the YES occurring at different addresses on the same day (Anderson, 1858; Anon., 1858)! One took place at The Bay Horse as usual, attended by Hind and just two other members, one of whom was new, whilst the other meeting with all the other members took place at 7 Castlegate (Figure 1, p136) with Prest in the chair! To Stainton, this was too good an opportunity for Shakespearian humour to pass up, and the editorial page (Stainton, 1858) remarks that:

"York is a large place, a fine place, and a very worthy place and lo! 'Now is the winter of our discontent made glorious summer by the sun of York!' But surely the two

friendly societies should not both monopolise the same title; ‘Methinks there are two Richmonds in the field’, but the question of course arises which is which?.....Perhaps next month they will both be claiming the title of *original*.”

This prediction came true when the 11 Sept 1858 *York Herald* reported a meeting of the Castlegate society under the moniker “the original society”³¹, countered a week later by “A. Member” of the Gillygate society³². The *York Herald* editors commented cheekily that “we are unable to give any opinion on the merits of the case. Readers can sift the matter for themselves, *if they think it worthwhile* [their emphasis].”³²

Publications give no direct indication of the cause of this split but it may not have been desirable for some members to meet in a Public House; an editorial comment underneath Anderson (1857b) implies this, and the Temperance movement was in those days gaining momentum. Naturally, a move to other premises would not be advantageous to the publican Mr Hind. Whatever the cause of this schism, two York societies using the same name existed until at least 1860^{33,34} and, for several years, meetings of both societies were reported in the *York Herald*, though only the Castlegate society reported thereafter in the *Weekly Intelligencer*. Ultimately the Castlegate society was more active and lasted until at least 1866³⁵. Thus it was that Prest took centre-stage in York entomology for the rest of his life.

The summer of 1858 was a hot one. Something more of the paradise the Vale of York presented to lepidopterists at this time can be gleaned from Prest’s report of July 5th (Prest, 1858a), of captures at ‘Longwith’ (presumably Langwith), Stockton [Forest], Holtby and Buttercrambe. These included Marsh Fritillary, Painted Lady (1), Pearl-bordered and Small Pearl-bordered Fritillary (both common), Dark Green Fritillary (abundant), Ringlet, Grizzled, Dingy, Small and Large Skippers and Silver-studded Blue. Dark Green Fritillary “was so abundant on the 29th [June] that I took upwards of a hundred in about three hours”. In the Sept 4 edition of the *Weekly Intelligencer*, Prest reports Alder Moth, Grayling, Large Tortoiseshell, Painted Lady, Comma, Silver-washed, Dark Green and High Brown Fritillaries, Buff Footman, Small Wainscot, Purple Hairstreak, Blackneck, Dark Bordered Beauty, an Ear moth, Straw Underwing and Broad-bordered Yellow Underwing (Prest, 1858b). He had now graduated onto moths as well as butterflies! Later in September a Camberwell Beauty was captured in York and it “came into his possession” (Prest, 1858c)!

On 3 January 1859 the annual meeting of the YES took place at Prest’s house and Rev F.O. Morris, editor of *The Naturalist* (not then a publication of the YNU, which did not yet exist), was elected president with Prest as a vice-president (Anderson, 1859). Morris was an established, well-connected and highly regarded entomologist living then at Nunburnholme near Market Weighton. He had published his *History of British Butterflies* in 1853, naming many fine collecting sites around York including Langwith (between Heslington and Wheldrake), Heslington Fields (now the University of York Heslington East campus), Stockton Common, Allerthorpe, Buttercrambe Moor and Sutton-on-Derwent (Morris, 1853). These sites contained a swathe of unimproved, often heathy, habitats in an arc north-east to south-east of York which were also visited by Prest. At the same meeting Prest exhibited his “fine collection of British Butterflies” which, with the help of specimen exchange, had not taken long to assemble! From then on his focus became moths!

In July 1859 both Prest and Robert Anderson (secretary of YES) were offering in exchange Dark Bordered Beauty moth, then as now a national rarity for which York was famous, Prest having

Figure 1. Seven Castlegate, York, the Prest family home from 1855 until at least 1866 and location of York Entomological Society meetings (see p134).

Photo taken in 2019 by P.J. Mayhew.



“again taken this species in some numbers” (Prest, 1859a). On 9 August, Prest’s oldest child Mary Jane, then six-years old, when walking by the New Walk along the River Ouse, found an Alder Moth larva and brought it home to him (Prest, 1859b). It is a charming sign of the empathy between daughter and father, and one of the few insights we have about family involvement in his pursuits. At the 2 Jan meeting in 1860, 523 Lepidoptera species had been found by the members the previous year, of which 12 were new. Prest was no longer amongst the society officers and the meetings were now to be rotated at other members’ houses (Anderson, 1860). In April 1861, however, the society met once again at Castlegate for a dinner to celebrate the third anniversary of the first ‘Castlegate’ meeting³⁶. About twenty guests were present, including several prominent citizens with natural history interests. One of these was a Mr Hind; could this have been Robert Hind? If so, maybe this was an attempt to settle any animosity between those involved in the YES split. Other evidence below suggests that the matter was eventually settled amicably. The occasion was replete with speeches and toasts and an open invitation from Morris for a guided entomological ramble at Nunburnholme. This was all testament to the success of Prest’s initial leadership.

Annie Prest, William and Phoebe’s third daughter, was baptized on 22 April 1860 at St Mary Castlegate³⁷. In 1861 the family was still living in Castlegate with Jane still listed as an upholsterer, Mary Jane and Laura both at school and William now employing two men and a boy³⁸. William and Phoebe’s second son, and last child, William Thomas, was baptized at St Mary Castlegate on 29 July 1862³⁹.

Prest does not appear in YES meeting reports after December 1862 and the reports give the impression of less activity by the society in general, which was probably the cause of its eventual demise. No doubt this was a busy time for Prest, with a business to run and young family to support. There was also a hiatus in accessible entomological journals at this time with the folding of the *Weekly Intelligencer* in 1861, which may have led to a waning in entomological interest. Prest did however continue with entomology: on 19 August 1866 (Prest, 1866) he took a Fortified Carpet from Stockton Forest (see Allis, 1870; c.f. Prest, 1866), not Holgate as has been reported by Sutton & Beaumont (1989), beaten from broom and checked by Thomas H. Allis, another York entomologist of national repute. This remains one of only two records of this moth in mainland Britain and was often considered Prest’s finest capture (Porritt, 1884a). Prest allowed the editors of the *Entomologist’s Monthly Magazine* to confirm the identification by sending a coloured drawing. On 2 October 1868 a Silver-striped Hawk-moth was captured

on Heworth Moor and found its way into Prest's collection (Prest, 1868).

In April 1871 Prest wrote a page-long summary of captures near York the previous year and it provides some of the best insights into his collecting trips (Prest, 1871). Prest collected a lot with John T. Carrington (a former YES member) in that year, using sugar, and also reared larvae at home. Captures included a long list from "our bog" (Askham, one of Prest's earliest yet cryptic references to it), including Oblique Carpet, Dentated Pug and Brown Scallop. He details an unsuccessful trip to Bishop Wood near Cawood to find Great Oak Beauty, and then a visit with Carrington and Edwin Birchall and son to what was evidently Sandburn, near Stockton Forest, to find Dark Bordered Beauty. They took Plain Wave at sugared trees there on the evening of 16 July. "Next morning we rose early and proceeded to run the blockade, for, be it known, that the proprietor of the estate had offered five shillings reward for apprehension of any entomologist found thereon!" This implied an overnight stay, probably at the Windmill Inn (now the Four Alls) on the Malton Road. "Soon after 7a.m., *vespertina* [Dark Bordered Beauty] made its appearance, and by breakfast time each of us had a fine series". The fact that Askham and Sandburn are not specifically named in the article may indicate a desire to protect these sites from other collectors.

1872 was a Camberwell Beauty influx year and the pages of the *Entomologist's Monthly Magazine* were full of reports of them. Prest contributed several reports from across Yorkshire (Prest, 1873). We can thus see him becoming a trusted collater of other lepidopterists' findings from across the county.

Throughout these years work and family life continued. For the Huntington Church Bazaar in April 1867 "the guildhall had received most tasteful decorations by the aid of flags, banners and various appropriate devices, under the superintendence of Mr William Prest, decorator, of Castlegate"⁴⁰. However, on 23 December 1869 tragedy struck the family with the death of young Annie, aged 9, from "phthisis" (tuberculosis)⁴¹. The mood in the family that Christmas must have been a sombre one. She was buried in York Cemetery (in the Seagar family grave, grave 4103, presumably because her parents had not yet died) on 28 December⁴¹. By 1871, Jane had apparently retired from upholstery, Mary Jane had started work as a saleswoman (she maintained an apparently good business head much later) and both the boys were at school.



Figure 2. Thirteen Holgate Road, York, the Prest family home from 1873 to 1884 and location of York and District Field Naturalists' Society meetings. Photo taken in 2019 by P.J. Mayhew.

The family had moved to 3 St Saviourgate⁴². By January 1873 (Prest, 1873) the family had moved again to 13 Holgate Road (Figure 2), another of the Prest addresses that was shortly to become part of local entomological history.

Establishing the YDFNS and the YNU, 1874 -1877

Between 1874 and 1877 William set up the York and District Field Naturalists' Society and ran it from his own home. Meeting reports were published in *The Naturalist (New Series)* by the West Riding Consolidated Naturalists' Society (WRCNS) to which the YDFNS was affiliated. As well as field excursions in the York District, William collected in many parts of mainland Britain during this period. At the first council meeting of the WRCNS he suggested the name change to the Yorkshire Naturalists' Union, which was adopted, and he was elected president of its Entomological Section.

On 5 March 1874 the *York Herald* published a notice under the title of "York and District Field Naturalists' Society"⁴³. The text continued: "Under this title a new society for scientific research has just been inaugurated in this city". The object of the new society was "to enable its members to thoroughly study the various branches of natural history". Monthly excursions were to be organized, and meetings for essays, discussion and the exhibition of specimens were to be held once a month at Prest's house. Remarkably, the minute books of these early meetings still survive, written in Prest's own hand⁴⁴. There is a beautiful illuminated title page signed by Prest, illustrating his artistic ability (Figure 3, p140).

On 11 March Prest was elected Secretary and Edwin Birchall, a former YES member and an entomologist of national repute, President⁴⁴. The YDFNS organized excursions in its first years to Jackdaw Crag (Boston Spa), Bishop Wood (Cawood) and Gormire (Sutton Bank)⁴⁴. In addition to insects (mainly Lepidoptera), YDFNS meetings featured a range of natural history specimens such as stuffed birds (shot), birds' eggs, fish, minerals, fossils and plants, along with curiosities and antiquities. In the first few meetings eclectic specimens included: "a fine specimen of the Amazon parrot that had lately died at the age of 100 years" (Anon., 1876a); "a specimen of the Black Swan which had lately adorned our noble river but was unfortunately killed during the late floods" (Anon., 1876b); "a fine specimen of the Common Sandpiper, taken from a large Pike, which had evidently bolted the bird alive" (Prest, 1876a) and "a very beautiful case of white kittens" (Prest, 1876b). Family were involved in meetings both directly and indirectly. For example, at the January 1875 meeting "after the members had partaken of refreshment, provided by Mrs Prest, the chairman proposed a vote of thanks to that lady and Mr Prest for their hospitality."⁴⁵ Charles Prest contributed birds' eggs as exhibits (Anon., 1877a), and the jawbone of the Indian shark and the saw of a large sawfish, brought by him from the Indian coast (he was a marine engineer) (Prest, 1883a). Charles is also mentioned in the YNU list of officers from 1877 as YDFNS librarian⁴⁶; presumably, the library was housed at 13 Holgate Road.

On 13 July 1874 Prest went collecting at Sandburn near Stockton-on-the-Forest and found a male variety of Dark Bordered Beauty with a rich brown colour and without prominent chequerboard markings (Figure 4a, p141). This was later figured in *The Entomologist* (Anon., 1878a) and formally described as *ab. fulva* by Cockayne (1934). Cockayne (1942) supposed that a specimen originating from Prest's collection that came into his possession via Webb and Harwood was this one. It is now in the Natural History Museum in London (specimen BMNH(E) 1857343). He also considered this to be the specimen figured by Barrett (1901, fig. 298c). Evidently, however, Prest collected more than one such specimen; for example in the YDFNS minutes of April 8 1874, before the above specimen was allegedly collected, he says he displayed a "fine variety" of this species⁴⁴, which was likely also an *ab. fulva*.

Prest also went further afield for his collecting; for example, he mentions in the YDFNS minutes visits to Monks Wood and St Ives (the Fens), Sherwood Forest, Witherslack (Cumbria) and

Darenth Wood near Dartford, Kent^{44, 47}. He displayed specimens at YDFNS meetings from a wider variety of sites, but it is generally unclear which were visited by him and from which the specimens were just acquired by exchange. In a later article (Prest, 1879a) he claims to have “visited most of the celebrated hunting grounds”, suggesting that most were collected by him on expeditions. Such sites include Llangollen, Wallasey (Prest, 1876c), Scotland (Anon. 1878b), the New Forest (Anon., 1877b) and Lewes (Anon., 1880a). Quite how he mixed running his own business with family life and his entomological hobby is left to the imagination, but entomologists of the day were often prodigious workers; he had his employees and sons to draw on for business help and, of course, there was no shortage of hands at home for domestic work!

Further confirmation of William’s artistic talent comes from the 1875 YDFNS annual meeting when he exhibited some “fine drawings of British moths, illustrating the pseudo-bombyces [notodontids and allies]”⁴⁸. Papers read by Prest at YDFNS meetings included “The life history and economy of *Eupithecia albipunctata*” (White-spotted Pug) (Anon., 1875) and “A week’s collecting in Sherwood Forest” (Prest, 1879b), though they were apparently not published or kept.

Following his success at organizing a celebratory birthday dinner for the YES, the first annual dinner of the YDFNS was held at the Queen Hotel, Micklegate⁴⁹ (just a short walk from Holgate Road) on Saturday 9 February 1877. Amongst some 60 guests there were several local dignitaries including the Lord Mayor and Sherriff. Prest gave an after-dinner speech about the society, “remarking that it was formed about three years ago to study the various branches of natural history in a practical manner.” For several years there had been no York society to meet this need but several were now flourishing in the West Riding, including the West Riding Consolidated Naturalists’ Society (WRCNS). It had been intended to be inclusive of working men and especially to encourage young men, but was open to all classes. The society had been successful and numbered nearly fifty members. Similar annual dinners took place for the next several years in different venues around York.

From 1875, under the auspices of the WRCNS, *The Naturalist (New Series)* journal had been published and Prest had been sending in regular reports of the YDFNS meetings. At the first meeting of the WRCNS council on 2 December 1876, Prest was present as a York representative (Anon., 1877c). One of the resolutions was that subsequent meetings should be divided into Sections, an arrangement that still exists, with George Porritt and Prest nominated to initially organize the Entomological Section. At this meeting Prest also proposed changing the name of the WRCNS to ‘The Yorkshire Naturalists’ Union’, in order to encompass areas of Yorkshire thus far excluded. The motivation may well have included the fact, still awkward today, that due to its central geography in Yorkshire, York naturalists encroach across several administrative boundaries. Prest’s suggestion was viewed favourably and, after some discussion of alternative wordings, adopted⁵⁰. Thus, Prest’s suggestion provided Yorkshire for the first time with a unified county natural history forum.

Major entomological works: 1877-1884

From 1877 until his death in 1884, Prest published important papers about the Yorkshire Lepidoptera fauna, presented specimens at major national and county exhibitions, organized field excursions and meetings for the YNU and had to deal with a financial crisis in the YDFNS which resulted in its eventual merger with another local society and the loss of Prest’s influence and leadership. Prest died shortly after this.

the 2 April 1877 meeting the newly renamed YNU formally approved its new name and also approved Prest as president and Porritt as secretary of the Entomological Section (Denison Roebuck, 1877a); a fairly impressive pairing! Prest became a regular attendee and organizer at YNU excursions and meetings in the next few years. At the May meeting Prest and George Dennis (another YDFNS member) exhibited an enormous sheet web (10x5ft) of the Cacao Moth *Ephesia elutella* found in a chicory warehouse, although by some confusion this was originally reported as *Eupithecia albipunctata* from a chocolate store (Denison Roebuck, 1877b)! In April 1877 another moth variety “discovered” by Prest was described formally: the melanic form of White-spotted Pug *E. albipunctata* var. *angelicata* (Barrett, 1877) (Figure 4, p141).

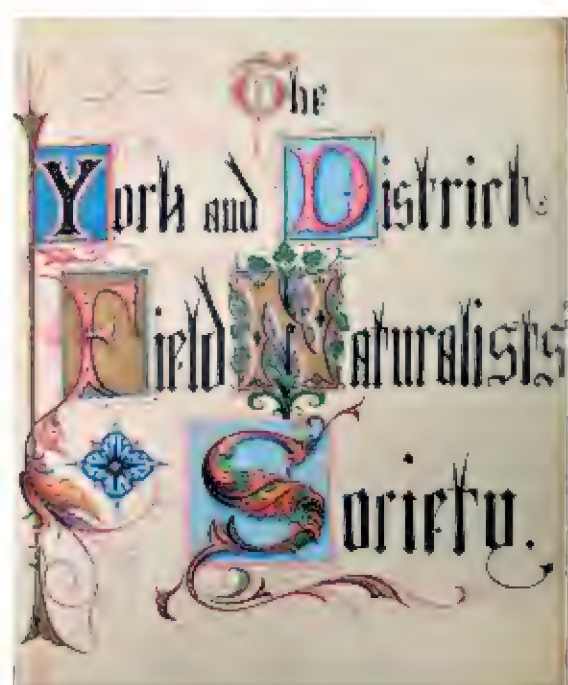


Figure 3 (see p138).

First page of the Minute Book of the York and District Field Naturalist Society, drawn by Prest. Reproduced from an original in the Borthwick Institute, University of York, (YDFNS/2/1).

Specimens from Bishop Wood had been exhibited by Prest at a YDFNS meeting the previous year (Anon., 1876c) and thence sent to Barrett, with the name suggested by Prest because they had been reared from larvae feeding on Angelica. April, however, brought grief to the family in the death of Jane Seagar, Phoebe’s mother, who had supported William and Phoebe ever since they had met. She died of bronchitis on 11 April aged 81 and was buried in the family grave in York Cemetery on 16 April⁵¹.

Prest also published a list of Yorkshire micro-lepidoptera found in 1877 in *The Transactions* (Prest, 1878) to complement one by Porritt on macros (Porritt, 1878a). In Porritt’s report, 1877 is reported as the wettest year in Yorkshire on record and being dismal for Lepidoptera. Prest was credited with finding a Grey Mountain Carpet in York which, being out of the way, was perhaps explained by the dismal conditions! Prest’s report is full of apologies of his own ignorance with micros and the fact that it was based on records from just himself and few York members. It contains a detailed description of the *Ephesia* finding noted above but otherwise is notable for the list of sites frequently visited, namely Thorne, Sandburn, Bramham, Bishop Wood, Askham, Strensall and Stockton Forest. Many of these remain some of our premier Yorkshire sites today, though all are probably degraded relative to Prest’s time.

At this time the subject of melanism in Lepidoptera was topical and Prest published an opinion paper on this topic in *The Entomologist* (Prest, 1877). He detailed how frequently he encountered dark varieties of Lepidoptera at York, where he claimed there was relatively little coal smoke, and gave a list of species from which he had captured dark varieties, including Coronet, Light Knot Grass, Knot Grass, The Miller, Dark Green Fritillary, Dark Bordered Beauty (four dark specimens in twenty years all captured within 50 yards of the same place having bred “hundreds, nay I may

say thousands” of the ordinary type), White-spotted Pug, Dark Arches, White Ermine, Magpie, Water Carpet, Centre-barred Sallow, Peppered Moth (both black and intermediate forms bred, but only exceptionally), Northern Drab and Minor Shoulder-Knot. Because of the local nature of varieties he was seeing, in the absence of coal smoke, Prest suggested that the nature of the soil and its effects on the foodplant were probably more important than fumes of coal smoke in generating such varieties. This implies that he was thinking more about environmental effects on development than processes affecting the frequency of hereditary forms, such as selection and migration, which dominates current thinking on this issue.

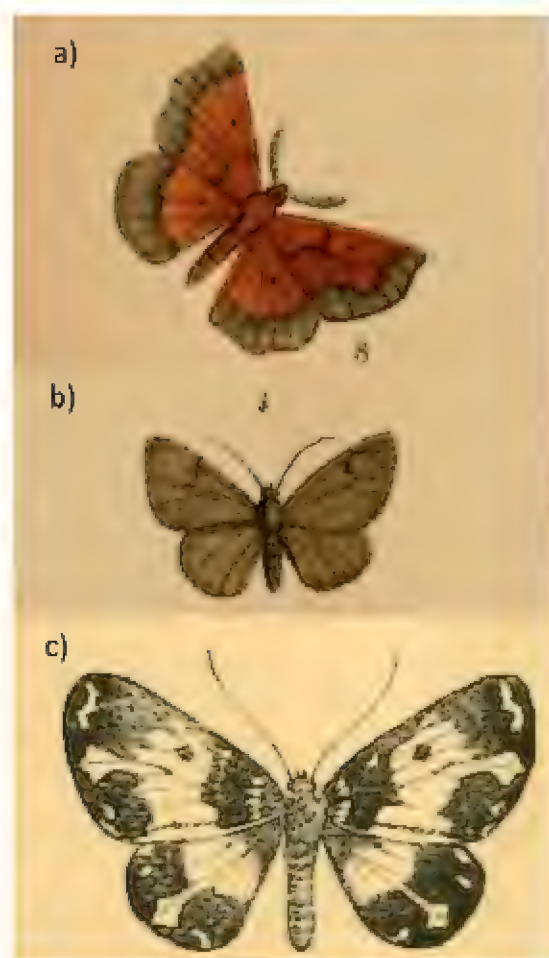


Figure 4.
Some Lepidoptera varieties
captured by Prest and figured in *The Entomologist*:

a) Dark Bordered Beauty *Epione vespertaria* ab. *fulva*, figured in (Anon., 1878a) (see p138).

b) White-spotted Pug *Eupithecia albipunctata* var. *angelicata*, figured in (Anon., 1878a) (see p140).

c) Variety of Argent and Sable *Rheumaptera hastata*, figured in (Carrington, 1881) (see p143).

Specimens are not illustrated to the same scale.

In January 1878 Prest received a letter inviting the YDFNS to contribute to a “Great National Entomological Exhibition”, the first of its kind, to be held at the Royal Aquarium, Westminster (Anon., 1878b). The organizer was John T. Carrington, naturalist at the aquarium, former editor of *The Entomologist* and later president of the South London Entomological Society. The YNU delegated Prest and Porritt to represent Yorkshire and George Dennis and George Jackson from the YDFNS also went (Porritt, 1878b). It was attended by an astonishing 70,000 people between 9 and 23 March but received mixed reviews. Porritt in *The Naturalist* reported it favourably (Porritt, 1878b), as did *The Entomologist* (Farn & Weston, 1878), but the *Entomologist’s Monthly Magazine* (Anon., 1878d) felt that it had fallen between two stools, too broad to be of use to experts and too over-the-heads of the public. Prest had exhibited several rarities, including his White-spotted Pug var. *angelicata*, Dark Bordered Beauty ab. *fulva* and Fortified Carpet mentioned above, as well as the *Epehstia* sheet web mentioned earlier, about which *The Entomologist* reported that “when twisted into a rope like form this web had supported a weight of 56 pounds”. Dennis also contributed a gynandromorph Dark Bordered Beauty captured at Sandburn the previous year (Anon., 1878a) and now in the NHM London. The *Daily News* (London) on 12 March reported that the exhibition included “Mr W. Prest, of York (exhibits 391-419) the northern varieties of the British moth in a most complete manner”⁵² whilst *The Standard* reported that “northern insects of infinite variety are shown by Mr Prest of York.”⁵³

On 5 August Prest acted as local secretary organizing the fifth YNU meeting of the year, at Bishop Wood. This was successful with good weather, 50-60 attendees and some 60 species of Lepidoptera recorded, including Silver-washed Fritillary (Denison Roebuck, 1878).

1879 marked Prest's involvement in the YNU grand exhibition at the Leeds Mechanics Institute, 10-16 January. At the opening *conversazione*, 400-500 people were present. Admission was one shilling with the Lepidoptera exhibition sharing the picture galleries with the bird collections. There were detailed reviews of the exhibition in *The Naturalist* (Anon., 1879a) and *Leeds Mercury*⁵⁴ but the *York Herald* gave the most details of the Prest collection: "An important feature of this part of the exhibition is the collection of British Lepidoptera belonging to Mr W. Prest, of York, consisting of 46 cases, which occupy in a double row, the whole of one side of the room. This collection includes about 2,000 varieties and between 12,000 and 15,000 specimens, many of which are exceedingly rare and valuable, and it is undoubtably the finest collection in the north of England."⁵⁵ The exhibition however was a financial failure and lost money, which was attributed to bad weather and local economic depression.⁵⁵

The 11 January YNU meeting at the Leeds exhibition marked the start of an ambitious project of the YNU Entomological Section, led by Prest and Porritt, to compile a list of all Yorkshire Lepidoptera with localities (Denison Roebuck, 1879a). For several years thereafter *The Naturalist* advertised the project on its back cover as one to be compiled by both Prest and Porritt, but this ceased after November 1881. As is well-known, the eventually-published lists came under Porritt's sole authorship, though it is obvious from the contents that Prest had a considerable hand in its compilation. It is possible that Prest 'dropped out' because of troubles at the YDFNS and illness, of which more below, but convention in those days was for manuscript writing to be undertaken by a single person.

The year 1879 was busy for Prest in other ways. He published his important list of macro-Lepidoptera from Askham Bog (Prest, 1879a), a benchmark study against which future records have been compared at this nationally important site (see Fitter & Smith, 1979). In this, he says he had been collecting Lepidoptera there for twenty years (i.e. since 1859). Of the butterflies he says that there are only 22 species at Askham and "none of them rare", but they contained Pearl-bordered, Small Pearl-bordered and Marsh Fritillaries, Green Hairstreak and Dingy Skipper; all now gone from the site, one gone from the county (Marsh Fritillary) and one now very rare (Pearl-bordered Fritillary). Green Hairstreak persists at Strensall but is now otherwise gone from the Vale of York. In this paper is the definitive statement that Dark Bordered Beauty moth did not occur there, despite the foodplant Creeping Willow being abundant, and despite moth specimens from Askham appearing in collections in the 1890s (Mayhew, 2018). It seems likely, therefore, that the 1890s specimens were the result of introductions, and John T. Carrington later claimed that he and Prest had attempted several such introductions unsuccessfully, although had named no specific sites (Anon., 1886). The list contains 325 species in all, and ended with the memorable words "I have visited most of the celebrated hunting grounds but never met with a place more prolific in insect life than Askham Bog, and for a really enjoyable collecting expedition, commend me to that locality".

This statement was prophetic because on 2 June 1879 Prest once again acted as local secretary for a YNU field meeting (the 3rd YNU meeting of that year) with Askham the main venue and YDFNS recruited as helpers. The day was well-attended by 60-70 YNU members. The post-field meetings were held in the Victoria Hall, Goodramgate, and although the botanists had a good time, the late spring meant that the entomologists were disappointed that day (Denison

Roebuck, 1879b). At the YNU excursion to Doncaster, 4 August, Prest and Porritt found a colony of the “very local” moth *Scoparia basistrigalis* in Edlington Wood. This was the first county record of which there remain only six (Denison Roebuck, 1879c). Prest also went on the 6 September YNU meeting to Riccall Common but collecting was disappointing (Denison Roebuck, 1879d). Riccall Common was destroyed by enclosure the very next year (Eagle Clarke, 1882)! On 17 September 1879 Prest was collecting at Sandburn again, this time with Robert Hind (described by Prest as his friend) and his son Austen, the latter finding an Alder Moth larva (Prest, 1879c). Clearly the rift over the split of the YES by then had healed fully, perhaps testament to Prest’s genial and likeable nature that seems to come across from how people wrote about him. During November, December, January and February Prest announced to the YDFNS and YNU that he would hold an open house every first and third Monday for people to visit his collection and make inquiries (Anon., 1879b).

At the 1880 YNU meeting in Malton on 17 May, Prest seconded a proposal for a “memorial” to Charles Darwin, signed by the president, congratulating him on the 21st anniversary of the Origin of Species (Denison Roebuck, 1880). This was presented in person to Darwin by a deputation from the YNU at his home on 3 November (Anon., 1880b) and was timely given that Darwin died some 17 months later. From this it seems that Prest held pro-Darwinian leanings, in marked contrast to some of his contemporaries such as former YES president Rev F.O. Morris, a staunch anti-Darwinist (Morris, 1875), and other YDFNS members such as William Hewett⁵⁶. The excursion to Castle Howard in connection with the Malton meeting had produced only five species of Lepidoptera, one of which however was Pearl-bordered Fritillary (Denison Roebuck, 1880)! In June Prest found by lantern at Sandburn a Large Red-belted Clearwing, a rare moth in Yorkshire (Prest, 1880a). In a letter dated August 16 1880 to *The Entomologist* (Prest, 1880b) Prest declared the current season the best for the last 8-10 years. He detailed a long list of captures at Sandburn and Edlington Wood, including a Leopard Moth, which he could not remember occurring in the district before. The January 1881 issue of *The Entomologist* figured an unusual variety of Argent and Sable taken by Prest at Edlington Wood in June 1880 (Carrington, 1881) (see figure 4, p141). Autumn 1880 produced an influx of Camberwell Beauties and Prest reported a couple seen or captured in York (Prest, 1880c).

On 15 January 1881 Prest acted as local secretary for the YNU annual meeting, held in the Victoria Hall, Goodramgate, York, at which the YDFNS hosted a *conversazione* and *soiree* based around its collections, including that of Prest (Denison Roebuck, 1881). At this stage William, now 56, employed five men and his son; Mary Jane, 27, was still a “sales woman”; Laura, 25, no occupation; Charles Segar, son, 23, Engine Fitter; and William Thomas, 18, painter⁵⁷. The family therefore had the painting business employing the two Williams, and Charles and Mary Jane bringing in additional income. It is interesting that all the grown-up children were still living at home (none had yet married). On 9 July 1881 Prest attended the YNU excursion at Thorne Moors and obtained Dotted Border Wave, then a new species to Yorkshire, and abundant Large Heath and Forester amongst many other moths (Wrigglesworth, 1882). On 7 August Prest found *Scoparia ancipitella* (then called *S. conspicualis*) at Sandburn, another new county record (then newly described) and a moth that remains rare in Yorkshire and very local in the UK (Wrigglesworth, 1882). A letter to *The Entomologist* on 26 August by L. Sturge from York relates the unlikely capture of an Adonis Blue near Oban in Scotland, and that Prest had checked it for him (Sturge, 1881).

In September 1881 the British Association for the Advancement of Science meeting returned to York, fifty years after the first meeting there, and both William Prests were listed as associates

attending⁵⁸. In *The Entomologist*, Prest (1882a) reported (16 Oct 1881) that it had been quite hard that year to find several pug moths that had been common previously. In a separate article (Prest, 1882b) he said he had found several *S. ancipitella* in his collection previously overlooked.

The 1882 and 1883 editions of *The Naturalist* contained few new mentions of Prest with only the YDFNS meetings of September to December 1882 being reported, all with Prest contributions. In a note to *The Entomologist* on 26 June 1882 Prest declared that this was the worst collecting season of his life (Prest, 1882c). He put it down to a mild winter enabling natural enemies to deplete the resting stages of Lepidoptera. In July 1883, Prest contributed a short note to *The Entomologist* on how poor the 1883 season had also been, this time due to cold, and that he had sugared near Penrith without success (Prest, 1883c). Another note on 20 September somewhat undermined the former one by listing quite a nice series of captures from Sandburn in July and August, from having “worked hard” there (Prest, 1883d). On 12 September at the YDFNS meeting Prest exhibited the tortrix *Epinotia rubiginosana*, then new to Yorkshire, and remaining rare today (Prest, 1883b). In December 1883 Prest published a paper on a new variety of burnet moth which he named provisionally *Zygaena eboracae*, considering it a local form of Narrow-bordered Five-spot Burnet (Prest, 1883e). It was pale with a pale border. He had visited the Natural History Museum collections in London, the Doubleday collection and the Zeller collection and had found nothing similar. Some specimens had been exhibited by Kirby at the Entomological Society of London and the general opinion was that they were Narrow-bordered Five-spot Burnet (Anon. 1883-1884), and Porritt later wrote the opinion that the unusual colour was a developmental abnormality (Porritt, 1884b). It has subsequently been considered *Z. Ionicerae* ab. *eboracae* Prest (e.g. Seitz, 1913). 1883 also saw the publication of the first set of Porritt’s lists (Porritt, 1883), of course without Prest as co-author. Though Porritt was otherwise generous in indicating those who had contributed information, Prest was not singled out above others.

In October 1883 the minutes of the YDFNS⁴⁷ indicate that the society was in financial difficulty and certain facts indicate that incompetence (or possibly foul play?) was at work. The treasurer, Mr Farmer, tendered his resignation but this was not accepted “unless he explain certain items”⁴⁷. At the November meeting George Dennis was appointed treasurer. In a letter received by the Society on 8 March 1884 from Samuel Walker of the ‘York Field Naturalists and Scientific Society’, a relatively new society being run from the northern side of the city, an eight-point plan of amalgamation of the two societies was put forward, with Point 6 being that no responsibility be taken for the YDFNS debts (which were £2 8s 2d). Point 5 was that the new Society would meet at new premises (i.e. not at Prest’s house). A YDFNS deputation (Dennis, Prest and Wilkinson) agreed to meet Walker at 11 Tower Street and agreed with all the proposals except Point 6, feeling that the debts could be covered by assets⁴⁷. The amalgamation came to pass with the name of the amalgamated society eventually reverting to that of its older predecessor, a change that would have been of some comfort to Prest. However, the financial problems and the loss of ownership necessitated by the resulting merger must have been a cause of great strain and a heavy blow.

William Prest died at home aged 59 just a few days later on Monday 7 April 1884⁵⁹ of gout (a painful inflammation of joints caused by accumulation of uric acid crystals)⁶⁰. He had apparently suffered from this complaint for a long time (Carrington, 1884) but this particular bout had only been a short one (Porritt 1884a). Risk factors for gout include lead poisoning, which affects kidney function, and Prest may have had high and long-term exposure to lead from paint through his decorating work. Flare-ups of gout can be caused by stress and it is possible

that the YDFNS issues were a contributing factor, though all this must remain speculative. The interment was at 2.30pm on 9 April at York Cemetery⁵⁹. The grave is number 4208, adjacent to the Seagar grave (grave 4103) and paid for earlier by Jane. The two headstones are in exactly the same style and William's grave now contains himself, Phoebe Ann, Charles Seagar, and William Thomas. The adjacent grave contains Annie Prest along with Thomas Seagar (Phoebe's father), Jane Seagar (her mother) and James Spetch (Jane's father).

The aftermath, 1884 onwards

Obituaries of Prest were published by Porritt in *The Naturalist* (Porritt, 1884a) and by John T. Carrington in *The Entomologist* (Carrington, 1884); publications and people with whom Prest had fruitful associations. Porritt's reminiscence seems to capture Prest well: "We have, when out collecting with him, often been struck with his pleasure on the capture of beautiful and perfect specimens of comparatively common species." Briefer death notices appeared in *Leopoldina* (Anon., 1884a) and *Zoologischer Anzeiger* (in German) (Anon., 1884b), implying some influence abroad.

The YDFNS met for its April monthly meeting on the day of Prest's interment but, owing to the death, no specimens were exhibited and the Society sent a note of condolence to Mrs Prest and family⁴⁷. The YDFNS continued to be active until the latter decades of the 20th Century, disbanding in 2002. From 1894, annual reports were kept of members' records by sectional recorders in ledger books gifted by George Dennis, and these and other society records and papers are now in the Borthwick Institute in York where they form a valuable natural and social historical legacy. Under Prest's initial influence, the YNU and its Entomological Section are still going strong and Prest's records from the York district form an important baseline against which more recent records of Yorkshire's Lepidoptera fauna can be compared.

Prest's insect collection was auctioned in London by J.C. Stevens of Covent Garden on 15 July 1884⁶¹, presumably to provide funds for the dependents in the family. Tragically, the collection was split into 80 lots, hence has been fragmented and it would now be much work to trace the surviving specimens. One Dark Bordered Beauty specimen mentioned above is in the Natural History Museum, London; others of the same species are in the Birmingham Museums Trust collection having first ended up in the South collection. The catalogue of sale still exists and provides some details of the contents⁶¹. There were 7,560 specimens mentioned, hence only about half the number estimated from the Leeds exhibition review (which may not have been accurate). It had been housed in a mahogany cabinet with 20 drawers, and another with 34 drawers, sold as separate lots. There were several rare Hawk-moths including Spurge, Bedstraw, Striped and Death's-head. There were six specimens of "*Zygaena eboracae*", sold in three lots of two specimens each, and nine Large Thorns, sold in three lots of three. There were 19 Dark Bordered Beauty specimens, though no varieties were mentioned. Many of the lots however contained fine varieties. A "fine series" of Magpie varieties numbered 34 specimens and another of Common and Dark Marbled Carpet numbered 126. That of Garden Tiger numbered 25 specimens. There was a single Clifton Nonpareil. The last lot contained two Camberwell Beauties, two Purple Emperors, two Large Blues, a Mazarine Blue and a Purple-edged Copper!

The Prest family fragmented following the death of William. Phoebe first lived on her inheritance with Laura in Minster Yard⁶², but when Laura married in 1900⁶³ Phoebe moved to live with Mary Jane in Coney Street⁶⁴, where she remained until dying of "senile decay" in 1911⁶⁵, aged 81. Mary Jane set up in business as a linen draper at 46 Coney Street⁶⁶. She raised her brother William's son (William Charles Seagar) until 1914 when he joined the armed forces at the

start of the Great War⁶⁷. Mary Jane never married but her business was apparently successful and she left a will of over £10,000⁶⁸ when she died in 1920⁶⁹. Laura initially lived with Phoebe in Minster Yard⁶², working as a dressmaker, but in 1900 married John Shannon⁶³, a widowed schoolmaster, and then lived in Castlegate with his children⁷⁰, dying in 1906⁷¹.

Charles Seagar married Annie Brown (b. c.1870 in York) in Wandsworth in 1898⁷² and they lived in West Ham, London, where they had three children, Norah, Phyllis, who contracted polio aged 2, and Charles⁷³, though Charles senior's job as a marine engineer meant he was seldom at home. They moved back to York when Charles retired, having contracted Locomotor Ataxia (a nervous affliction resulting from syphilis) aged 50⁷³. He eventually died of this in 1917, aged 59⁷⁴, leaving Annie £151 in his estate⁷⁵.

William Thomas was apparently the black sheep of the family. After his father's death he travelled annually to New York on business for several years⁷⁶, where on one occasion he must have returned with a son, William Charles Seagar, who was subsequently raised by Mary Jane⁶⁴! He appears to have held several job titles, including commercial traveller⁷⁶, liver merchant⁶⁸ and painter⁷⁷. He remained single and lodged in Hull⁷⁷, dying of gangrene in 1921, aged 59⁷⁸. I have often wondered if subsequent male Prest descendants got nervous as they approached the age of 59!

William Charles Seagar Prest became a clerk in Beckett's Bank in York⁶⁷. At the outbreak of the Great War he joined the cavalry reserve, but was subsequently granted a commission in the 5th Battalion West Yorkshire Regiment. In January 1916 he was sent to the western front, as battalion bombing officer, and took part in the Battle of the Somme, being wounded on 7 July. He was evacuated home to recover but on returning to the trenches was shot dead by a sniper on 17 August⁶⁷. He is buried at Authuille military cemetery and his grave inscribed "He giveth his beloved sleep"⁷⁹. He is memorialized in St Martin Le Grand church on Coney Street, near to where he was raised by Mary Jane.

The remaining Prest mysteries

It must be rare when a biographer discovers everything he or she hoped to. My unsolved wish-list for this biography included: What happened to William's parents and siblings? Where did he go to school? How did he come to take up entomology? How did he meet the Seagars? What did he look like? Why did the YES fold? When did he first fall ill with gout and what was the cause? What made him drop out of Porritt's lists (if that is what happened)? What happened to his paintings and to the papers that he presented but did not publish? What were the precise circumstances of the YDFNS financial crisis and merger? Where are his entomological specimens now? And what on Earth did William Thomas get up to in New York? These and other mysteries I leave for future researchers to speculate on or solve.

Acknowledgments

I am grateful to Ed Baker for alerting me to the sale catalogue of Prest's collection in the NHM, London, and to the Borthwick Institute for Archives, Bootham School Archives and the West Yorkshire Archive for hosting me, and to the Friends of York Cemetery for their patient and enthusiastic work. I thank the Borthwick Institute for permission to reproduce Figure 3, and the York Cemetery Trust for permission to publish facts held in their database.

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The Freshwater Pearl Mussel *Margaritifera margaritifera* (Linnaeus, 1758): an incorrect Yorkshire record

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In *The Naturalist* Vol. 144 No. 1102 for December 2019, within the report for Semerwater for 27 July 2019 (page 233), there is mention of the Freshwater Pearl Mussel being recorded here, as it appears in overviews of the biodiversity of the site by Natural England and other organisations.

In the standard work on this group of molluscs by Killeen *et al.* (2004) it states that the Pearl Mussel mostly occurs in nutrient-poor (oligotrophic) streams and rivers with a pH of 5.5 to 7, low calcium and low conductivity. A form or variation of the species known as *durrovensis* Phillips 1928, does, however, occur in Ireland in the River Nore-Suir system which has a more calcareous aspect to the river's biotope. This is an extreme form of the variations found in this mussel.

As indicated above, the Pearl Mussel is almost entirely confined to fast-flowing rivers with poor nutrition and its occurrence in a lake is thus very unlikely. This would only occur if a river flows through the lake and has the volume to make it through the lake fairly rapidly. Semerwater has a low volume of water entering and a small flow leaving, which in itself makes it unlikely that this bivalve would occur here. If, however, it did occur then the Environment Agency (EA) would be the first organisation to inform, as this is a highly protected species because of illegal collection and the EA would be very unlikely to agree to its publication in this form.

The Yorkshire Conchological Society visited Semerwater on 11 April 2015, when David Lindley recorded quite a number of Duck Mussels *Anodonta anatina* near the outlet stream at SD918876. This is far more likely to be the mussel found. If anyone finds any mollusc specimen which needs to be identified prior to publication please forward it to me to ensure a correct identification and so avoid future problems.

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Monitoring an *Anthrenus* infestation: an opportunist ‘Lockdown’ project

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*‘Lay not up for yourself treasures upon earth
Where moth and rust doth corrupt’*

Matthew VI, 19.

Introduction

The Varied Carpet Beetle *Anthrenus verbasci* (L.) (Coleoptera, Dermestidae) resembles a small (c.3mm) ladybird (Coleoptera, Coccinellidae) though the elytra lack the typically glossy surface but have an attractive matt chequerboard pattern formed by alternating patches of white, black and orange scales. Larvae are banded yellowish-brown, the three thoracic and the last four abdominal segments being darker. Popularly known as ‘woolly bears’ they are coarsely hairy, with tufts of longer erectile bristles at the rear end.

In the wild they form part of the keratin and chitin recycling ecology where eggs are deposited in the linings of birds’ nests and other animal bedding or in dry carrion, where the larvae feed on feathers, hair and fragments of epidermis. the preferred feeding habitats of Varied Carpet Beetle larvae are dry bird nests (Woodroffe & Southgate, 1954) but they also colonise redundant wasp nests, feeding on insect debris. The adult beetles emerge in the spring, fly well, are attracted to light and to flowers where they feed on pollen and nectar (Mourier & Winding, 1975).

In domestic property, sources of infestation are typically associated with bird’s nests under the eaves, felt carpet underlay and other wool-rich fabrics. In spite of their varied diet, when textiles are attacked, *A. verbasci* usually prefer clean new materials such as fine cashmere garments (Mourier & Winding, 1975). They will also feed on dead insects and in museums are much feared by curators of costume, taxidermy and insect collections.

Based on householder enquiries handled by natural history staff at Doncaster Museum, the incidences of *A. verbasci* seem to have increased in frequency as a household pest since the 1980s, enquiry frequencies progressively outnumbering those concerning house moths (Lepidoptera, Tineidae) and other beetle infestations such as by Carpet Beetle *Attagenus pellio*, Mealworm Beetle *Tenebrio molitor* and Drug-store Beetle *Stegobium paniceum*.

During the spring of 2020, initially while in quarantine during a suspected COVID-19 flu infection and subsequently during the Coronavirus pandemic UK ‘Lockdown’ requirements, I spent most days from about 11am to 7pm working in a south-facing conservatory at the rear of 7 Aldcliffe Crescent, Balby, Doncaster (SK557999). Here an outbreak of *Anthrenus verbasci* was noticed and monitored.

The conservatory is a 14ft by 6ft brick-built construction with an uncovered concrete floor, plastic roof, white UPVC double-glazed windows and door and white UPVC internal windowsills against which insects from 0.1mm were clearly visible. Three dark green plastic plant troughs (2ft 2in. x 8in) containing a range of pot plants and geological objects were arranged on the windowsills and a total of 7ft 6in of wall space was occupied by wooden slatted shelving used to store runs of un-bound scientific journals and as temporary accommodation for the store boxes

housing the late Albert Henderson’s extensive research archive on the Rabbit and Hare Warrens of Britain and Europe. The accommodation is shared with a short-haired dark tortoiseshell cat *Felis catus* whose bowl of dry cat food and a litter tray with mineral cat litter were present in the conservatory throughout the monitoring period.

Methods

Whenever an *Anthrenus* adult was noticed on any of the bright white window frames or windowsills it was collected and recorded in a project diary. Although temperatures were not recorded inside the conservatory, to relate emergence trends with prevailing weather conditions, maximum outdoor temperatures recorded at the nearest weather station at Fittingley Airport (SK6699) were monitored via the internet site (<https://www.bbc.com/weather/2651123>).

Results

The first adult *Anthrenus* was encountered on 9 March and the last on 8 June with a total of 328 specimens recorded. The daily emergence numbers ranged from 1 to 48 with a mean of 2.54 in March (n=28), 11.18 in April (n=246), 2.52 in May (n=53) and 1 (n=1) in June. The peak emergence events included 42 emerging on 20 April, 48 on 23 April and 24 on 24 April.

Maximum outdoor temperatures experienced during the monitoring period ranged from 7 to 30°C. Figure 2 (p154) presents temperature ranges in ten divisions each advancing by 3°C. Plotting the numbers of beetles emerging on days when given temperatures were reached indicates the optimum developmental conditions for pupae and presumably for larvae. The greatest daily numbers of emergences were within the range 13 to 18°C with specific emergence peaks at 14° (42 emerging on 20 April), 17° (24 emerging on 24 April) and 18° (48 emerging on 23 April).

Discussion *Adult emergence period.* With the adult emergence period extending through March, April, May and just into June this broadly agreed with the period stated in Mourier & Winding (1975). However in peaking markedly in mid-April (see figure 1, p154), this was much earlier than the favoured emergence/flight period of May and June found by Blake (1958) to have developed to coincide with maximum hours of sunshine and the blooming period for preferred flowers. Further, the field research of Woodroffe & Southgate (1954) revealed an even later season, based on adults collected while nectaring on Hogweed *Heracleum sphondylium* during the months of June and July.

Between 1 March and 27 May 2020 there had been 573 hours of sunshine in England, breaking the record of 555.3 hrs in 1948 (see internet note 2). Provisional Met Office statistics for spring 2020 (see internet note 3) are assembled in Table 1, showing that the maximum and mean temperatures and sunshine duration were all significantly above the 1981-2010 baseline.

Table 1: Provisional Met Office statistics for Spring 2020 (see Internet note 3).

	Maximum temperature	Mean temperature	Sunshine duration
Spring 2020	14.69 °C	9.65 °C	695hrs
Anomaly relative to 1981-2010 baseline	2.01%	1.12%	153%

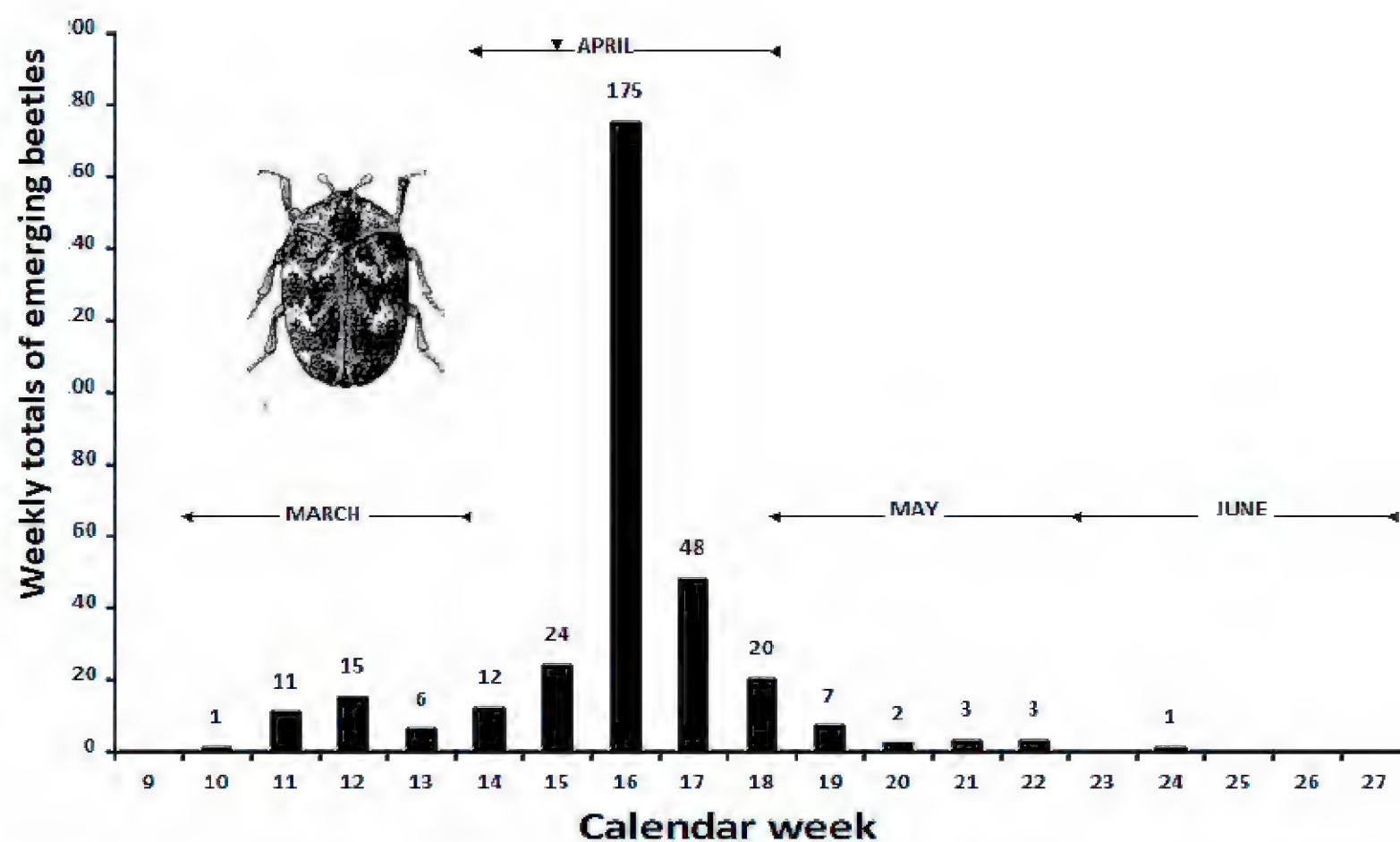


Figure 1: Seasonality of adult *Anthrenus* emergence, numbers recorded according to calendar weeks in 2020.

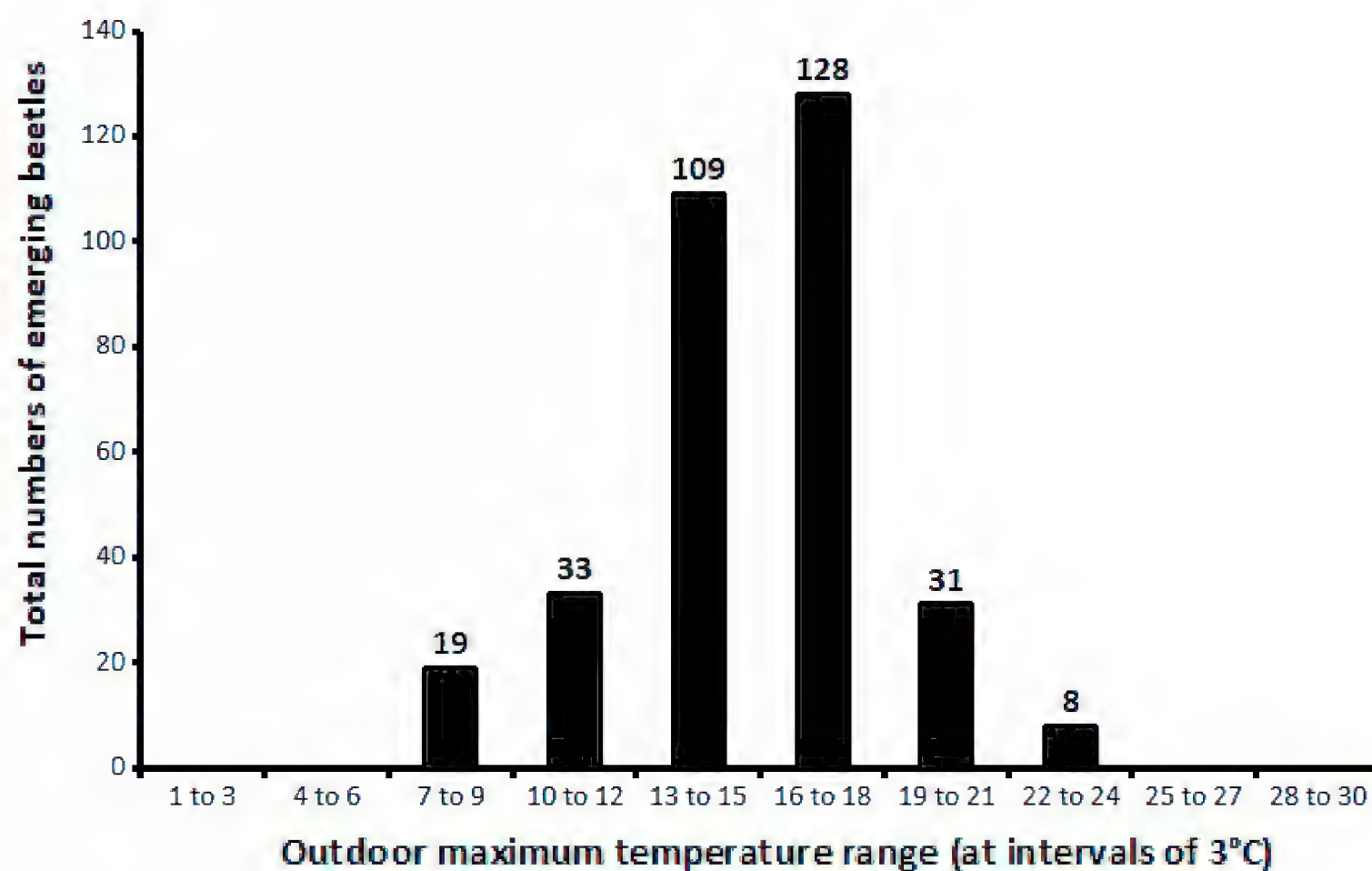


Figure 2: Total numbers of emerging beetles in ten temperature divisions each advancing by 3 degrees C.

Through laboratory experimentation, Blake (1958) showed the period of pupation in *A. verbasci* shortened substantially with the increase of temperature, from 89 days at 10°C to 9 days at 25°C. A shortening of pupation time and possibly an accelerated larval development caused by increased temperatures probably explains the mechanism for the unusually early mid-April emergence peak recorded in this study. An advance of emergence period may be an indication of progressively warming summer temperatures through climate change, a comparison with the work of Woodroffe & Southgate (1954) and Blake (1958) indicating an advance of two to three months since the 1950s.

Feeding substrates. The source of such a large infestation was something of a puzzle since there were no bird or mammal (rodent) nests and the conservatory wasn't being used to store clothing, taxidermy or insect collections. However, the focus of the infestation was indicated by numerous discarded larval/pupal skins and freshly-emerged beetles found amongst the debris of insect exoskeletons accumulated in spiders' webs under the plant troughs and behind the storage racking. Although there was no evidence of *Anthrenus* associated with contents of the cat food bowl or litter tray, the powdered debris of dry cat food falling into two of the open-topped store boxes of the Henderson archive coincided with concentrations of shed larval skins therein, suggesting this to be an opportunistic larval food source. Though the conservatory floor was regularly vacuumed, moulted cat fur still accumulated amongst the general debris in the spiders' webs behind the wooden racking and could well have been an additional attraction for the *Anthrenus* infestation.

Since the adults were strongly attracted to light, thus facilitating their easy capture on the south-facing conservatory windows and windowsills, none were ever encountered in the adjoining, somewhat gloomier, kitchen or elsewhere within the property, though future seasons will no doubt reveal whether additional infestations have established.

Acknowledgement

I would like to thank Bob Marsh (YNU Coleoptera recorder) for reviewing the text and confirming the specimens as *A. verbasci*.

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Internet note 2: <https://www.theguardian.com/uk-news/2020/may/29/uk-spring-the-sunniest-since-records-began-says-met-office>

Internet note 3: <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2020/2020-spring-and-may-stats>

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Obituary: William Frederick Curtis 1942 - 2019



Bill was born at Grantham on 4th October 1942 into a family of teachers: his father a headmaster and his mother a headmistress. It was expected that he would follow this profession but, developing a teenage interest in birds and also having a keen interest in geography with a fascination for studying maps of the world, he decided that he wanted to 'go to sea'. He finally chose to study marine communication at Hull Technical College, which provided the added attraction of being close to Spurn Point, which he visited regularly.

Whilst at college, he met his future wife Margery a nursing student, and they married in 1967 after six years of courtship; he was home for only a few days before being away at sea for almost a year. In these early years, on 24th

April 1969, whilst on leave and sea watching off Hornsea, he had good views of a Black-browed Albatross many thousands of miles from its home in the Southern Oceans, where Bill would eventually spend many years, and leading him to become an acknowledged expert on the albatrosses, petrels and shearwaters.

He had a long and distinguished career, working first for Marconi, sailing regularly between North and South America, followed by four months in Japanese waters and later in the Royal Fleet Auxiliary being attached to the Royal Navy. He spent the last 30 years of service as a Telecommunications Officer, which included being on active service during the Falklands conflict. His long and dedicated service as a member of the Royal Naval Birdwatching Society resulted in an invitation for himself and his wife to attend a Buckingham Palace garden party. He was a member of the British Ornithologists' Union and several other Natural History Societies, including his local Hornsea Bird Club.

Retiring in 1997 to his home at Atwick, much time was spent visiting Tophill Low Nature Reserve, where he acted as a volunteer, Hornsea Mere and sea watching at Hornsea and Mappleton, in addition to operating a moth trap in his extensive garden. Once settled down to terrestrial life, he and Margery embarked on a series of holidays. The first, perhaps not surprisingly, was a cruise to Norway followed by two more. Then came a series of trips to Russia, China, Iceland, Estonia, Bulgaria, Spain, Gibraltar, Portugal and whale-watching across the Bay of Biscay. In October 1999, I had the pleasure of leading them on a memorable safari to Kenya.

A long-standing member of the YNU, his involvement with the Ornithological Section was invaluable: a respected contributor to the bird records, Bird Recorder for Vice-County 61 from 1977 to 1985 and Editor of the County Bird Report from 1986 to 1996. He was elected to the Presidency in 2004 and his Presidential address 'The Seabirds of Yorkshire - a review' was delivered at Crossbills, Halifax on Saturday 4th December.

Bill was a close friend for over 50 years and a true birdwatcher, evolving from boyhood, his lifetime profession giving him unparalleled opportunities to pursue his hobby. For my collection of study skins, he regularly supplied me with bird specimens from around the world, which had been found dead on deck, either by himself or members of the crew recruited by him to collect bodies; these were then stored in the ship's freezer until he came home on leave.

During the last few years, he suffered from major health problems and died peacefully at his home on 1st May 2019. My final memory of him was on Tuesday 13th November 2018, when we lunched together at the 'Cow Shed Cafe' at Fraisthorpe, overlooking the sea which had been so much a part of his life. Our thoughts are with his wife, Margery, their two daughters, Charlotte and Emily, and their families. The very well attended funeral service was held at the Octon Crematorium, near Bridlington, on 13th May, the coffin being draped with the Union Jack.

John R. Mather

Obituary: John Bowers 1938 - 2020

In John Bowers the YNU has lost someone who not only had a lifelong enthusiasm for natural history and had developed an expertise across many branches of the subject but who also played a major role in the running of the YNU during the first two decades of the 21st Century.

John was born in Hampshire, his interest in natural history beginning during his very early teenage years in Fareham, when he started visiting Titchfield Haven, then privately owned. There Dr Canning Suffern, then sub-editor of *The Lancet* and a celebrated local naturalist (always known as 'Doc'), had gained permission to take groups around the Haven where he trained a whole generation of young people to identify birds and insects and to take accurate and detailed records; these data led in 1959 to the designation of Titchfield as an SSSI and, ultimately, a National Nature Reserve. This was a formative experience for John; he had not just acquired a knowledge of birds and insects but also learnt early in his life the importance of meticulously collecting and recording data for understanding species and their conservation.



The second great early influence on John as a naturalist was his association with the Portsmouth Group, generally known as 'the PG', a completely informal collection of enthusiastic young birders, watching at Farlington Marshes and around Langstone Harbour. John made lifelong friends there and, like many of the others, spent all his free time (including Christmas Day) on the Marsh. They had a serious purpose, co-ordinating their observations and submitting a joint annual report to Hampshire's bird recorder. 'Members' of the PG also regularly visited the New Forest, which remained until the end of his life one of John's happiest hunting grounds for birds, dragonflies and orthoptera. They also visited Saint Catherine's Point on the Isle of Wight, which stoked John's lifelong fascination with migration watching and his interest in lighthouses. In turn, this would later lead him to spend almost 40 years in spring and autumn on the Greek island of Lesbos, where he and local friends founded a pressure group to protect the island's wetlands. He wrote a book on the dragonflies of Lesbos and later produced ebooks on its butterflies and reptiles (see Back Cover). He was working on an ebook on the orthoptera of Lesbos when he died.

John attended Fareham Secondary Modern Boys School until the age of 15 when he left without having had the opportunity to acquire any qualifications. He served an apprenticeship as an electrical engineer at the Royal Naval Aircraft Yard, Fleetlands, Gosport, which was certainly character building, but when he finished this the pull of nature drew him to spend time as Assistant Warden on Lundy Island Nature Reserve, where he skilfully avoided conscription for a year! The services caught up with him eventually and he joined the RAF just before conscription ended in 1960. His medical, which revealed red-green colour blindness, dashed his hopes of using his skills as a qualified aircraft engine fitter, and the mundane tasks he was subsequently allocated, spurred him on to do A Levels at evening classes, which led to a Diploma in Economics and Politics from Ruskin College, Oxford, in 1964. He then gained a BA (Hons) in Politics, Philosophy and Economics from Worcester College, Oxford in just two years, followed by a number of research and teaching roles before being appointed a lecturer in economics at the University of Leeds in 1969, where he eventually became Head of the Economics Division at Leeds Business School, much of his career at the University focusing on environmental economics.

In the 1960s John was one of those who recognised the devastating effects of agricultural intensification on habitats and wildlife and, as an economist, he was able to expose the flaws in the accepted accounting for agricultural improvement projects. As well as writing books and papers on the subject he frequently acted as a consultant and expert witness for organisations such as Wildlife Trusts, RSPB, CPRE and WWF, also giving evidence to Parliamentary committees. In 1978 he gave evidence at the Amberley Wild Brooks public enquiry, successfully halting plans by The Ministry of Agriculture and the Water Authority to drain one of the most beautiful and ecologically important river valleys in the country. As a *Times* article in 1982 said, “The Leeds economist found himself in a deepening commitment to exposing the wrongheaded sums done by ‘the improvers’. There has never been such a public enquiry since.” The complex of wetland habitats is now recognised as being internationally important and is part of the Arun Valley Ramsar Site and Special Protection Area (SPA). By the early 1980s the RSPB had identified 14 wetland sites threatened by drainage and John was involved in the fight for conservation involving the Derwent Ings, the Yare barrage in Suffolk and the Soar in the East Midlands.

In 1997 John was made President of the British Association of Nature Conservationists, having contributed many articles to their journal, ECOS. He joined Leeds Naturalists’ Club in 1998 and in 1999 gave an inspiring talk to the Club on the *Headingley Moth Trap*, an item of natural history equipment that gained notoriety some years later when it caught fire in 2015 and caused significant damage to the house! He later became President of the Club, resurrecting its newsletter and contributing articles on moths and a 30-year study of wildlife in his own garden.

On retirement from Leeds University in 2004 he joined the YNU and promptly became Chairman of the Executive in 2005, a post he held until his final illness intervened in late 2017. During his time as Chairman John helped navigate the YNU through a period of some significant changes, including the amalgamation of the YNU’s two journals, the moving of the YNU library to the NEYEDC offices at York and the formalising of a contractual agreement with the NEYEDC to provide membership services, a revamping of the YNU website and the establishment of YNU Facebook and Twitter accounts.

John’s early life exemplified the kind of experiences that provide ideal training for the young naturalist: the rigorous approach to observing and recording taught by ‘Doc’; bird-watching with ‘the PG’ in a group of peers who set terrifyingly high standards; and then the year on Lundy where he did a great deal of ringing and learnt to skin bird lighthouse fatalities for museum

collections. Until he got his first car in 1980, John relied on public transport for his natural history expeditions, which entailed very early starts, extremely long walks and often bivouacking in the most primitive way with tinned and dried food, getting water from bogs and boiling it. His wife, Anne, who was his constant companion throughout this physically demanding regime, remembers it particularly vividly!

When John was asked how he would like to be remembered he said 'As a conservationist first and a naturalist second.' Nonetheless, his willingness to share his wide-ranging and excellent knowledge of natural history was greatly appreciated by many. He chaired YNU meetings in an authoritative and effective way but with good humour and flashes of acerbic wit! He contributed a great deal to the development of the YNU and will be sorely missed.

Andy Millard

Book Review

Natural Awakenings: Early Naturalists in Lakeland by Ian D. Hodkinson. Extra series 49, ISBN 978 1873124 83 3 price £20 post free. Cumberland and Westmorland Antiquarian and Archaeological Society. Copies available from the Hon. Librarian, I.D.Carwana, 10 Peter Street, Carlisle, Cumbria (Email: librarian@cumbriapast.com; Tel: 01228 544120).

One of Yorkshire's assets is that it abuts the Lake District and that national parks on each side of the border merge to give a substantial area of countryside that includes some of the wildest such in England. This has attracted naturalists who have lived there. Ian Hodkinson considers the earliest of such, who were the first to record the nature of the vegetation and to study the animals that lived there. Of the eleven such whose investigations he considers, the earliest, Thomas Lawson (1632-1691) was a Yorkshireman who, however, lived for most of his life in the Lake District.

According to Hodkinson, Lawson was "without doubt the true pioneer of Cumbrian natural history" who is to be regarded as "the influential naturalist" who began the process of documenting the plants of the county in which he spent the greater part of his life. Happily his "meticulous notebook", of which photographs of selected pages are reproduced, is preserved by the Linnean Society.

Lawson was born in Lawkland, still no more than a hamlet. Although baptized in the established church, and even serving as a minister in Rampside near Barrow-in-Furness, he became a Quaker and eventually a schoolmaster at Great Strickland, near Penrith. He was an ardent collector of plants, not only in Cumbria but in Yorkshire, Northumberland and elsewhere, but it was to the flora of Cumbria that he devoted most attention. Some idea of the scope of his work is indicated in an informative table that lists the many areas in Cumbria and North Lancashire in which he collected plants.

The next serious pioneer in the study of natural history in Lakeland - William Nicholson (1655-1727) - is much better known as he eventually became bishop of Carlisle. As Hodkinson records, he made many contributions to natural history, the most significant being contained in an unpublished leather-bound notebook dated 1690 and entitled *Nicholson's Botany*. In fact, this covers not only his botanical observations but information on fishes, fossils, museum collections and notes on history and antiquities. His interests were indeed wide. For example, his notes

include items on 28 species of marine fishes which, reflecting then common ignorance, include not only porpoises but crustaceans and molluscs. Nevertheless, by the standards of his times, Nicholson was a competent naturalist whose observations embraced insects, crustaceans and molluscs.

Space forbids consideration of the nine other individuals whose contributions to natural history are as varied, and as interesting, as their contributors. These include two shoemaker botanists, both from Kendal, a physician, clergyman and apothecary and a remarkable individual, John Gough (1757 to 1825) who became blind before he was three years old but whose scientific abilities were truly remarkable, and who well merits the 20 page chapter that Hodkinson devotes to recording his achievements. This is a book that I am very pleased to possess.

Geoffrey Fryer

Notice: Cancellation of YNU 2020 AGM at Settle

In view of the continuing health threats posed by Covid-19, the Executive has regretfully decided that the AGM, scheduled for 10 October in Settle, should not go ahead as planned. Instead it will effectively be postponed until the same time in 2021 and Judith Allinson will remain as President until then. The accounts and annual report for 2019-20, which are formally approved by the Executive, will be made available online, when members may raise any queries they might have with the Treasurer (treasurer@ynu.org.uk). One co-opted Trustee is standing down (no other Trustees complete their 3-year term of office this year) so there will be just one vacancy. Any YNU member interested in becoming a trustee should contact a member of the Executive.

YNU Calendar 2020

You will be aware that most YNU events have already been cancelled due to the Coronavirus situation. Up-to-date information can be obtained from the organiser/contact indicated.

- Aug 15 VC65 Excursion. Cautley Spout & Cautley Home Beck. SD698969. Cancelled.
- Sept 23 University of Leeds MSc Field Skills Day. St. Chad's Parish Centre, Leeds. If you would like to be involved in tutoring a small group or for further information contact Paula Lightfoot (p.lightfoot@btinternet.com). Cancelled.
- 26 Bryological Section. Jagger Howe VC62. Cancelled.
- Oct 10 YNU Natural Sciences Forum (10:30-12:30) and YNU Annual General Meeting, Settle. Postponed until 2021 - see above.
- 17 Entomological Section AGM. Postponed until October 2021. The business of the cancelled meeting will be conducted via e-mail and notified to Section members.

Please note: The December issue of *The Naturalist* normally contains accounts of the VC excursions but these have all had to be cancelled because of Covid-19. The Editorial Board would therefore very much welcome accounts of any interesting natural history observations made by members during the lockdown period.



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editor@ynu.org.uk

Please look at a recent issue of the journal for a general idea of how to present your article. Also see *The Naturalist* - *Guidance for authors* at www.ynu.org.uk/naturalist and please **avoid** the following:

- using any paragraph formatting and line spacings other than single.
- using tabs to tabulate information (please use MS Word table format).
- inserting any figures, graphs or plates into the text; indicate their proposed locations in the text and send them as separate files.

Good quality, high resolution images are very welcome and should be sent as .jpg files, with a separate MS Word file containing the caption and name of the person to whom the image should be attributed.

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